eLEUW
ATHER

De Leuw, Cather & Company
Consulting Engineers and Planners

in association with
Jefferson Associates
DKS Associates
Dr. Ira Fink

DOCUMENTS DEPT.
SAN FRANCISCO
PUBLIC LIBRARY

Final Report
of the
San Francisco Joint Institutional Transportation Systems Management Study

for
City and County of San Francisco

October 1979

D
REF
388.4132
F49

JOINT INSTITUTIONAL TRANSPORTATION SYSTEMS MANAGEMENT GROUP

Mr. Robert LaPointe - Chairman
University of California
San Francisco

Mr. Gerald Moller
Children's Hospital

Dean Edward L. Davis
City College of San Francisco

Mr. Charles R. Shepley
Firemen's Fund

Mr. Gregory N. Price
Mr. Richard K. Swain
Kaiser Hospital

Mr. Douglas A. Kunsman
Marshal Hale Memorial Hospital

Mr. Richard M. Willis
Mount Zion Hospital

Mr. Oren Reinbolt
Pacific Medical Center

Mr. Jack Hauser
Ralph K. Davies Medical Center

Sister Lilian
St. Mary's Hospital

Mr. Joseph Burgess, Jr.
San Francisco General Hospital

Mr. Dale Fleming
San Francisco State University

Ms. Kathleen Kearney
University of San Francisco

Mr. Richard Allen
Veterans Administration Medical Center

Mr. George Williams
Department of City Planning

Mr. Sy Mouber
Metropolitan Transportation Commission

Mr. Buford Johnson
Municipal Railway

Mr. Scott Shoaf
Mr. Norman Bray
Department of Public Works

Ms. Charna Staten
Ms. Anja Miller
Rides for Bay Area Commuters

JOINT INSTITUTIONAL TRANSPORTATION BROKERS ASSOCIATION

Mr. Cliff Chambers - President
Children's Hospital
Marshal Hale Hospital

Mr. Gerald De Girolamo
City College of San Francisco

Mr. Arthur Cooke
Mr. Victor Irvine
Firemen's Fund

Ms. Kay Webster
Kaiser Hospital

Mr. Richard M. Willis
Mr. Paul Rund
Mt. Zion Hospital

Ms. Kathleen La Cross
Pacific Medical Center

Ms. Pam Valviola
Ms. Jan Malone
Ralph K. Davies Medical Center

Mr. Bill Sammon
St. Mary's Hospital

Mr. Jon Schorle
Mr. Paul Forster
San Francisco State University

Mr. Jim Wood
Mr. Lee Clark
Mrs. Helen Kirkpatrick
University of California, San Francisco

Mrs. Louise McClung
University of San Francisco

Mr. Charles B. Hanson
Veterans Administration Medical Center

PROJECT PERSONNEL

Mr. Jon Twichell
Project Director
Bolles Associates

Mr. William Dietrich
Project Manager
DKS Associates

Dr. Ira Fink
Special Advisor

Mr. Gordon Shunk
Mr. Robert Donnelly
De Leuw, Cather & Co.

Mr. Michael Kennedy
Mr. Steve Lowens
Mr. Richard Sauve
DKS Associates

Mr. Donald Graff
Jefferson Associates

SAN FRANCISCO PUBLIC LIBRARY
3 1223 03551 4745

FINAL REPORT

OF THE
SAN FRANCISCO
JOINT INSTITUTIONAL TRANSPORTATION SYSTEMS MANAGEMENT STUDY

5/S

SAN FRANCISCO

SAN FRANCISCO
PUBLIC LIBRARY

REFERENCE
BOOK

Not to be taken from the Library

BY
DE LEUW, CATHER & COMPANY
DKS ASSOCIATES
JEFFERSON ASSOCIATES
DR. IRA FINK

OCTOBER 1979

D REF 388.4132 F49

Final report of the San
Francisco joint
1979.

3 1223 03551 4745

**DeLEUW
CATHER**

De Leuw, Cather & Company
Consulting Engineers and Planners

120 Howard Street
P. O. Box 7991
San Francisco, California 94120
415/495-6060

Our Ref.:

October 9, 1979

Mr. Rai Y. Okamoto, Director
City Planning Department
100 Larkin Street
San Francisco, CA. 94102

Dear Mr. Okamoto:

We are pleased to submit the attached Final Report of the San Francisco Joint Institutional Transportation Systems Management (TSM) Study for the City and County of San Francisco. The report provides an overview and comparison of existing transportation conditions at the participating facilities, assesses potential for TSM program improvements, sets goals for the program, and identifies a comprehensive and coordinated set of measures tailored to the facilities, with actions necessary for implementation. In addition to the attached report, twelve individual TSM reports have been provided for participating institutions.

The joint Institutional TSM Program is unique in the nation, involving the coordination of fourteen institutions in a cooperative program of ride-sharing, transit, parking management and other supporting TSM measures. There is a strong commitment from the participating institutions to the TSM program, demonstrated by the designation and participation of Transportation Brokers from the institutions in the study effort and concurrent broker training classes.

On behalf of personnel from De Leuw, Cather & Company, DKS Associates, Jefferson Associates and Dr. Ira Fink we would like to thank your staff for their efforts and comments throughout the study.

We have appreciated the opportunity to serve the City on this important and challenging project. It is our hope that this work and the resultant formal association of Transportation Brokers trained during the project will provide improved transportation at the participating facilities through TSM program implementation.

Sincerely,

DE LEUW, CATHER & COMPANY

L.D. HAZZARD

Lawrence D. Hazzard
Vice President

LDH/DKS/rh

PROVIDING DE LEUW, CATHER™
CONSULTING SERVICES

CONTENTS

I INTRODUCTION 1

Study Participants 1
Background 3
Program Organization 3
Report Contents 5

II EXISTING CONDITIONS 6

Employment Characteristics 6
Employee Travel Patterns 8
Parking Supply and Usage 12
Public Transit Services and Usage 12
Ride-Sharing 16

III POTENTIAL FOR TSM IMPROVEMENTS 17

Existing Transportation Deficiencies 17
Employee Perceptions About Transportation Alternatives 18
Neighborhood Concerns About Parking 18
Implications of MUNI Five-Year Plan 20
Candidate TSM Measures 22
Evaluation of TSM Potential 22
Goals for the TSM Program 25

IV RECOMMENDED TSM PLAN ELEMENTS 28

Public Transit 28
Ride-Sharing 33
Parking and Traffic Management 35
Marketing and Incentives 35
Program Administration 36
Program Implementation 38

V AREAS FOR PUBLIC AGENCY ACTION 40

Municipal Railway 40
Department of Public Works 52
San Mateo County Transit District 62
Golden Gate Bridge, Highway and Transportation District 64
Rides for Bay Area Commuters 68

APPENDIX A: EMPLOYEE TRANSPORTATION SURVEYS 70

FIGURES

1. Locations of Study Participants 2
2. Employees/Students of Participating Institutions 7
3. Primary Means of Transportation 9
4. Residential Parking Permit Plans Affecting Study Participants 19
5 MUNI 5-Year Plan Proposed Midday Routes 21
6. Proposed Shuttle Service to Children's Marshal Hale, St. Mary's and Ralph K. Davies 31
7. Express Bus-Stonetown/S.F. State to Daly City BART Station 32
8. Potential Routes for East-West Reverse Express Commute Service 42
9. Potential Outer Mission Crosstown Express 43
10. Line 28 Route Change 46
11. Possible Limited Stop Service on MUNI Line 28 47
12. Possible Limited Stop Service 48
13. Alternative Limited Stop Routes to CCSF 49
14. Reversal of South ends of Proposed Lines 28 and 72 50
15. Ocean/Phelan Loop Improvements 54
16. Ocean/Phelan/General Intersection Improvements 56
17. New Driveway of North Reservoir Parking Lot 57
18. Wideness of Existing Driveway into North Reservoir Parking Lot 58
19. Proposed Curb Parking Permit Control Areas 61
20. Potential Institutional Grouping for San Mateo County Charter Bus 63
21. Alternative Institutional Groupings for Marin County Charter Bus 65
22. Possible Rerouting of Golden Gate Transit Routes 67

TABLES

1. Major Shifts at Institutions 8
2. Primary Means of Transportation 10
3. Residence Locations 11
4. Single Occupant Auto Drivers by Residence Location 13
5. Parking Characteristics 14
6. Major Transit Services to Participating Institutions 15
7. Institutional Goals 27
8. Alternative Groupings for Sam Trans Service from San Mateo County 66
9. Alternative Groupings fro Joint Club Bus Service from Marin County 68

CHAPTER I

INTRODUCTION

The City of San Francisco, Department of City Planning and a consortium of 14 major institutions located in neighborhood districts are participating in the San Francisco Joint Institutional Transportation Systems Management (TSM) Program. The objective of the TSM program is to reduce auto parking and traffic impacts at each institution by means of low capital cost measures such as carpools, public and private transit services, parking management and the like, and to foster economies of operation through cooperative efforts with other participating institutions. In an increasingly energy-scarce future, these same measures that are designed to reduce auto traffic impacts, will help to maintain accessibility to the institutions, an accessibility which is fundamental to their continued vitality.

The joint TSM program initiated and run at the institutional level is the first of its kind in the nation, and is a test case for potential application in other cities throughout the country. Accordingly, development of the program and its evaluation are being assisted financially by the Federal Urban Mass Transportation Administration and it also has the full support of major public agencies in the Bay Area that are concerned with transportation.

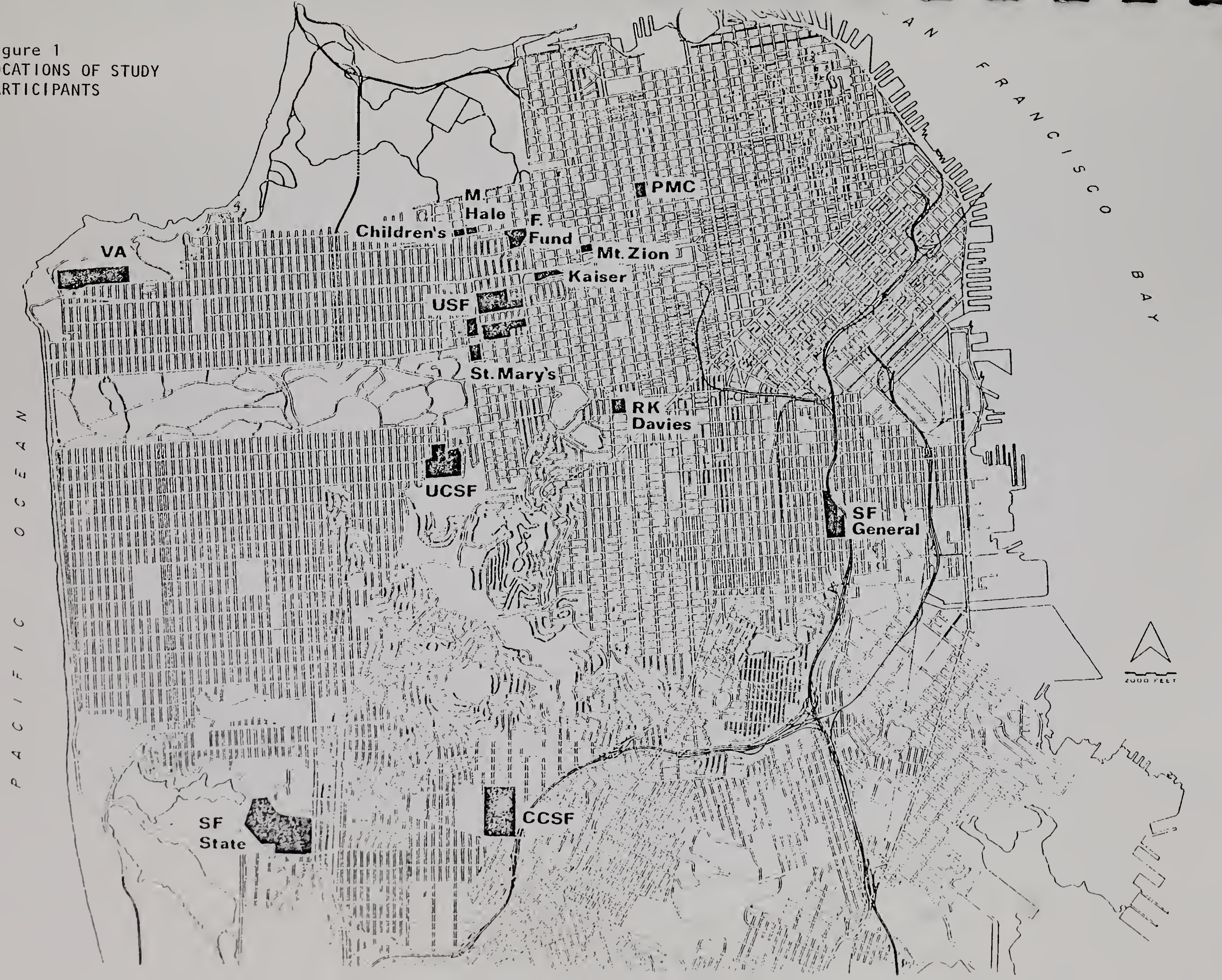
STUDY PARTICIPANTS

A consortium of fourteen major institutions located outside the downtown area are participating in the Joint Institutional TSM Program (See Figure 1). They are as follows:

Educational	University of California San Francisco (UCSF)
	San Francisco State University (SF State)
	University of San Francisco (USF)
	City College of San Francisco (CCSF)
Medical	Marshal Hale Memorial Hospital
	Mt. Zion Hospital
	Pacific Medical Center
	Children's Hospital
	Kaiser Hospital
	St. Mary's Hospital
	Ralph K. Davies Medical Center
	Veteran's Hospital
	San Francisco General Hospital
Insurance	Fireman's Fund

Additionally, the City's Departments of City Planning and Public Works, the Municipal Railway (MUNI), the Metropolitan Transportation Commission, and RIDES FOR BAY AREA COMMUTERS are all actively supporting the program.

Figure 1
LOCATIONS OF STUDY PARTICIPANTS



BACKGROUND

The origin of the Joint Institutional TSM Program can be traced back several years. In 1975, the University of California-San Francisco initiated its own TSM Program in response to concerns about the potential traffic and parking impacts of the University's modernization program on the adjacent neighborhood. A follow-up evaluation study* was completed in 1977. It found that the University's program of carpool incentives, vanpools, buspools, shuttle bus services and marketing had succeeded in eliminating 8 percent of the University's daily traffic -- about 500 vehicles per day -- to and from campus.

In the meantime, the City imposed a requirement through Ordinance No. 174-76 that any private institution located in a residential area of San Francisco prepare an Institutional Master Plan (IMP) describing existing and anticipated development at the institution, potential impacts of anticipated developments, and possible mitigation measures. A TSM Plan addressing traffic and parking concerns is to be included. Five of the 14 participants are exempted from the IMP requirements since they are publicly operated. A sixth (Fireman's Fund) is exempted because it is not defined as an institution under the Ordinance.

Concurrently the West Bay Health Systems Agency has been urging more attention to hospital planning and cooperative measures designed to make more effective use of existing facilities. The TSM Program is one such cooperative effort to help solve joint institutional problems.

As an outgrowth of these activities -- USCF's TSM Program and the IMP requirement -- The City's Department of City Planning organized a Joint Institutional Transportation Group in 1977. The City's Planning Department subsequently applied for and received Federal funding to assist in a joint effort to develop, implement and evaluate TSM Programs at the institutions.

PROGRAM ORGANIZATION

The overall program is organized into four phases:

1. TSM Plan Development

2. Transportation Broker Training

3. Program Implementation

4. Evaluation

---

*University of California, San Francisco, TSM Study, De Leuw, Cather & Company, September 1977.

Phase 1 -- TSM Plan Development

This first phase is essentially a planning study whose objective is to identify appropriate TSM actions and goals, and to serve as a reference guide during the later implementation phase. It began in February, 1979 with selection of a consultant team to develop TSM Plans for 12 of the 14 of the participating institutions*. Specific steps in the development of the TSM Plan included:

- Compilation of all available transportation data and information relative to the institution.
- Analysis of employee surveys; existing and planned public transit to the facility; use of on-site parking; traffic conditions in the area; transportation programs.
- Development of realistic goals for modal shifts and for vehicular traffic and parking reductions.
- Identification and recommendation of TSM measures appropriate to each institution stressing practical actions and joint efforts with other institutions.
- Specification of implementation activities related to the TSM Plan.

Overall results of this phase are documented in this report. Additionally, detailed TSM Plans were documented in separate reports to each of the 12 institutions for which plans were developed.

Phase 2 -- Transportation Broker Training

As a requirement of program participation, each institution designated a Transportation Broker to be responsible for implementation of the TSM Plan. Concurrently with the planning study, a Transportation Broker Training Class was conducted by Golden Gate University. It ran for a period of three months (May-July, 1979) and involved ten classes of 3-4 hours each. The course covered all aspects of Transportatation Systems Management, including ride-sharing, carpooling, vanpooling, club buses, parking management, transit, and institutional management responsibility. Experts and managers of these various types of systems served as guest lecturers.

Many of the Transportation Brokers were either police or security officers or administrative personnel concerned with parking and transportation. They generally had no prior professional training in transportation related activities. During the class, a transformation took place. The

---

*Two of the participating institutions -- University of California-San Francisco and Children's Hospital -- have previously developed TSM Plans. Current TSM planning for these therefore, focused on cooperative actions with other participating institutions.

concept of Transportation Systems Management passed from the stage of being a "buzz word" to a concept that was fully understood and supported by each of the brokers. During the last class session, each of the brokers was asked to prepare a TSM work program describing his or her anticipated responsibilities, and it was clear from the results that general awareness and support for TSM had been greatly increased during the class.

As another result of the training, a formalized association of Transportation Brokers has been organized to ensure continuing dialogue beyond the the end of the course. The enthusiastic support shown by the Transportation Brokers, along with the TSM Plan described later in this report, provide the necessary ingredients to continue with implementation.

Phases 3 and 4 -- Program Implementation and Evaluation

The final two phases of the overall program remain to be completed. The implementation phase, which has already begun at some institutions under the direction of transportation brokers, involves initiation and continuation of the proposed TSM actions. As noted later, however, it will take several years to fully implement the plans and to accomplish their goals, but much of the groundwork can be laid in the first year.

The fourth phase, that of evaluation, will be a continuing task of program monitoring and evaluation. To assist in evaluation, the City has reserved funds to evaluate program effects after approximately a year of implementation. This may include resurveys of employees and students, and possible suggestions for program changes.

REPORT CONTENTS

The report which follows gives an overview and compares the Consultant's recommended TSM Plans for the participating institutions. Following the introductory chapter, Chapter II presents a description of existing conditions and transportation services at the various institutions. Chapter III identifies opportunities for improvement in terms of goals for changes in travel mode, joint institutional cooperation, and neighborhood coordination. Chapter IV describes the five major elements of each of the TSM Plans. Finally, Chapter V presents the recommendations contained in each institution's TSM Plan categorized by the public agencies with most direct interaction.

CHAPTER II

EXISTING CONDITIONS

The first step in TSM plan development is to gain a clear understanding of the nature of each institution, the transportation system which serves it, and the existing transportation usage by institutional employees and visitors. This is needed not only for identifying potential for TSM improvements but also to provide "before" data for post-implementation evaluation. This chapter gives an overview of the background information developed for the various institutions; considerably more detail is available in the 12 separate institutional TSM plans.

EMPLOYMENT CHARACTERISTICS

With the exception of Fireman's Fund, which is a private insurance company, all of the study participants are hospitals or campuses.

Employment

Employment varies considerably among the institutions, as shown in Figure 2. The largest single employer is UCSF with some 5,700 faculty and staff members. Most of the other institutions employ in the range of 1,000-2,000 employees. In terms of total site population, however, the City College and SF State campuses far exceed all other institutions due to their large student enrollments.

Work Schedules

The various hospitals surveyed operate around the clock with several fixed work shifts. As a consequence, a smaller portion of their employees are on standard day-time work schedules than is the case with other types of employers. And work shifts in the case of nursing staff and others change from time to time. Similarly, attendance patterns of students and faculty members of the campuses can be irregular, and often change from day to day and semester to semester. Particularly for City College but also at the other campuses, significant activities are at night. This variability is shown in Table 1 which summarizes work start times for a number of institutions. The variation of employee work schedules has important implications on ride-sharing and transit potential since it makes it more difficult to match commute times on a regular basis, and significant travel takes place at night when transit service is curtailed. On the other hand, Marshal Hale and Fireman's Fund are two examples of institutions which have adopted flexible work schedule policies which are designed to make it easier to share rides and use transit.

Figure 2
EMPLOYEES/STUDENTS AT PARTICIPATING INSTITUTIONS

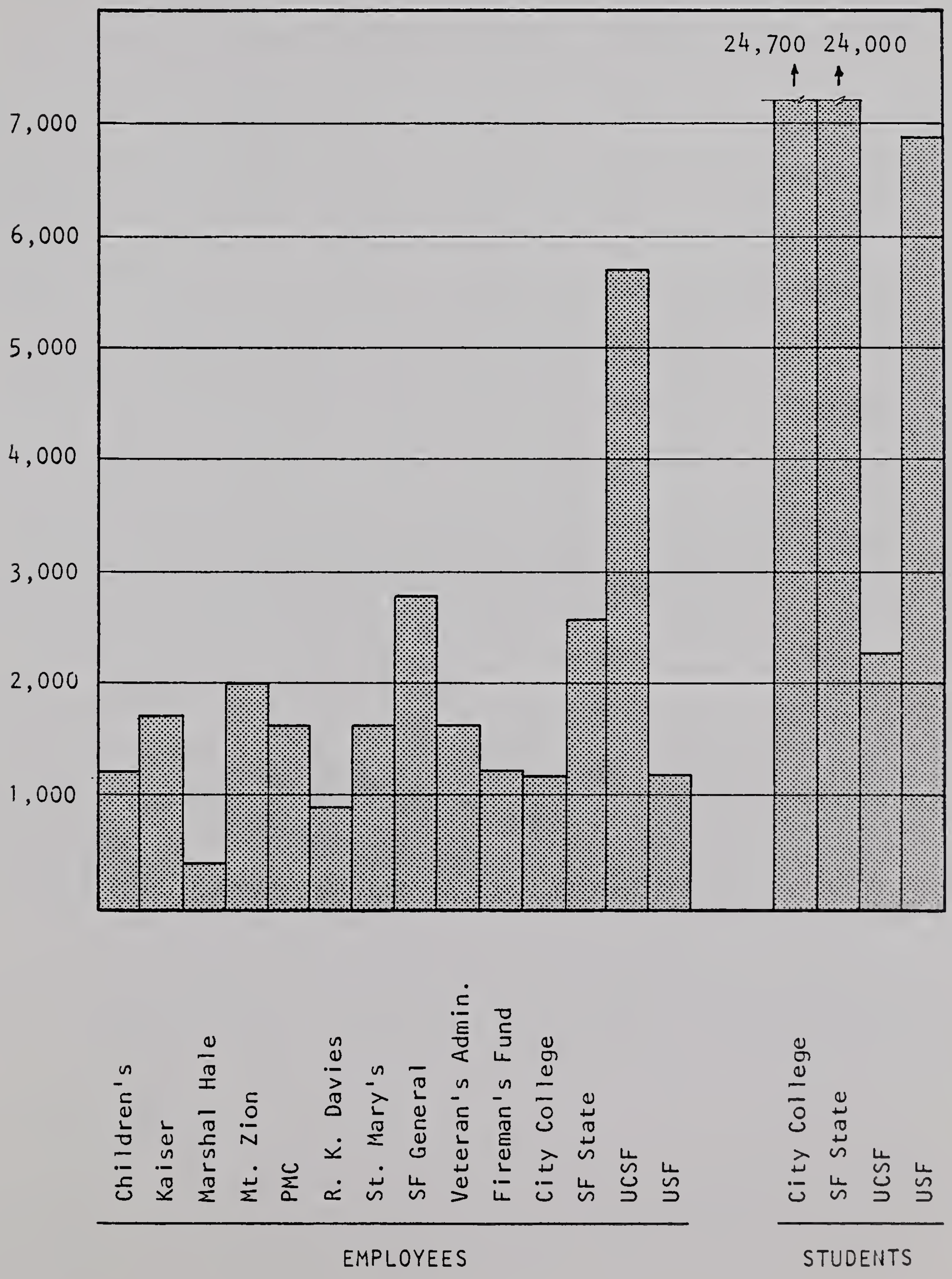


Table 1
MAJOR SHIFTS AT INSTITUTIONS

	Percent of Employees Starting Work At:						
	7:00AM	7:30AM	8:00AM	8:30AM	9:00AM	3:00PM	3:30PM
Marshal Hale	13%	39%	12%	*	--	--	15%
PMC	19%	*	14%	18%	*	8%	--
R. K. Davies	29%	*	17%	*	--	10%	--
St. Mary's	11%	19%	17%	20%	*	--	8%
SF General	15%	*	28%	18%	--	5%	--
Veteran's	13%	17%	45%	*	*	--	4%
Fireman's Fund	*	28%	35%	20%	--	--	--
SF State	*	*	45%	*	19%	--	--

---

* Less than 10 percent

EMPLOYEE TRAVEL PATTERNS

Information on existing employee travel patterns such as mode choice, residence location, and so on was taken from questionnaire surveys conducted either in this study or previously by the institutions themselves. The surveys are described in Appendix A.

Means of Commute

At all institutions except Fireman's Fund, the single-occupant auto is the predominant means of commute by employees. Likewise, only at City College and UCSF do less than half the students drive alone. These observations are shown in Figure 3 and Table 2. In most cases, public transit (and particularly MUNI) is the second most frequently reported means of commute and, in the case of City College students, over half use MUNI or BART on a regular basis.

Carpooling is observed at all institutions but only to a relatively limited extent. Buspools are operated at only two of the institutions -- UCSF and Fireman's Fund -- and significant numbers of vanpools operate only at UCSF.

Residence Locations

The nature of transportation services available to employees is highly dependent on residence location. Table 3 summarizes employee and student residence locations by county or county group. Overall, almost two-thirds of the hospital employees live within San Francisco, and

Figure 3
PRIMARY MEANS OF TRANSPORTATION

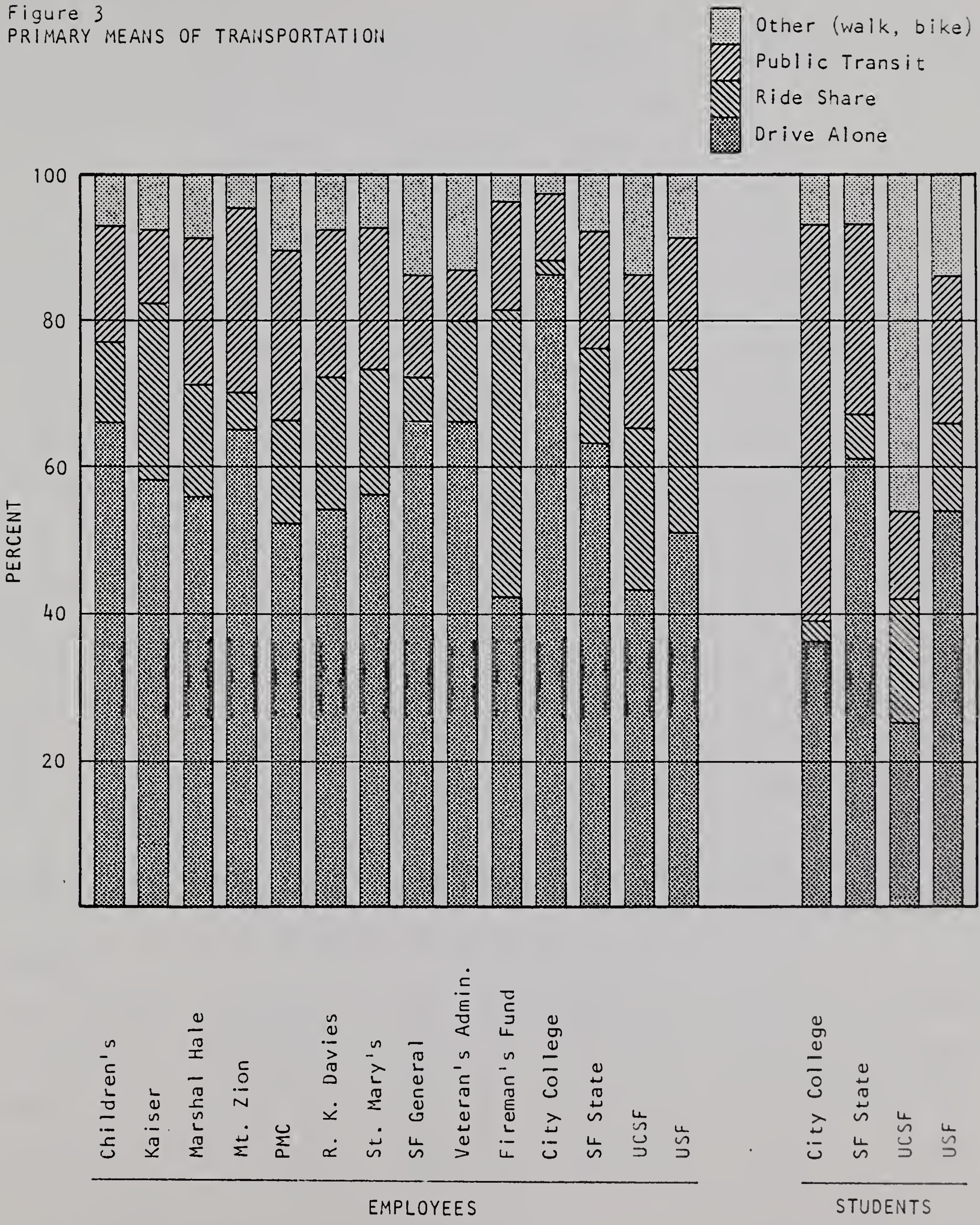


Table 2
PRIMARY MEANS OF TRANSPORTATION

	Drive alone		Share ride		Public transit		Other (walk, Bike)		Total	
Employees	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.
Children's	810	65	150	12	200	16	90	7	1,250	100
Kaiser	1,020	58	430	24	180	10	140	8	1,770	100
Marshal Hale	225	56	60	15	80	20	35	9	400	100
Mt. Zion	1,340	65	100	5	480	25	90	5	2,010	100
PMC	860	52	230	14	390	23	170	11	1,650	100
R.K. Davies	490	54	150	18	180	20	80	8	900	100
St. Mary's	920	56	280	17	310	19	130	8	1,640	100
S.F. General	1,850	66	170	6	390	14	390	14	2,800	100
Veteran's	1,090	66	230	14	120	7	210	13	1,650	100
Fireman's Fund	530	42	490	39	190	15	50	4	1,260	100
City College	1,040	86	30	2	120	10	20	2	1,210	100
S.F. State	1,690	63	350	13	430	16	210	8	2,680	100
UCSF	2,460	43	1,250	22	1,200	21	800	14	5,710	100
USF	610	51	260	22	210	18	110	9	1,190	100
Total Employees	14,935	57%	4,180	16%	4,480	17%	2,525	10%	26,120	100%
Students										
City College*	5,500	36	400	3	8,400	54	1,100	7	15,400	100
S.F. State	14,700	61	1,400	6	6,200	26	1,700	7	24,000	100
UCSF	590	25	410	17	280	12	1,080	46	2,360	100
USF	3,740	54	830	12	1,390	20	970	14	6,930	100
Total Students	24,530	50%	3,040	7%	16,270	33%	4,850	10%	48,690	100%

*Day Division

Table 3

RESIDENCE LOCATIONS

	San Francisco		North Bay		East Bay		Peninsula		Total	
Employees	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.
Children's	850	68	150	12	100	8	150	12	1,250	100
Kaiser	1,060	60	250	14	160	9	300	17	1,770	100
Marshal Hale	260	66	30	7	40	9	70	18	400	100
Mt. Zion	1,300	65	190	10	240	12	280	13	2,010	100
PMC	1,120	68	200	12	150	9	180	11	1,650	100
R K Davies	610	68	50	6	80	8	160	18	900	100
St. Mary's	1,040	63	200	12	160	10	240	15	1,640	100
SF General	1,730	62	220	8	420	15	430	15	2,800	100
Veteran's	910	55	180	11	200	12	360	22	1,650	100
Fireman's Fund	500	40	400	32	190	15	170	13	1,260	100
City College	670	55	120	10	150	13	270	22	1,210	100
SF State	1,320	49	220	8	370	14	770	29	2.680	100
UCSF	3,770	66	670	12	570	10	700	12	5,710	100
USF	670	56	110	10	240	20	170	14	1,190	100
Total Employees	15,810	61	2,990	11	3,070	12	4,250	16	26,120	100
Students										
City College*	14,910	97	60	-	120	1	310	2	15,400	100
SF State	15,000	62	1,400	6	2,900	12	4,700	20	24,000	100
UCSF	1,870	79	90	4	260	11	140	6	2,360	100
USF	5,200	75	280	4	550	8	900	13	6,930	100
Total Students	36,980	76	1,830	4	3,830	8	6,050	12	48,690	100

*Day Division

this does not vary much among hospitals. Fireman's Fund and campus employees have greatest tendency to live outside the City, and for the most part students are just the reverse. (Indeed, virtually all City College students reside in San Francisco.)

The implications of general residence location on commute mode choice are illustrated in Table 4. The table indicates the percentage of employees and students who drive alone from each county or county group. It is clear that the greatest usage of single-occupant autos for commuting is by employees living outside the City, and particularly on the Peninsula. This reflects the lengthy and difficult transit access from those points.

PARKING SUPPLY AND USAGE

Table 5 summarizes selected data about parking at the various institutions. Although all institutions provide some employee and/or visitor parking, the number of spaces provided and policies on their use vary widely. In general, the campuses have the greatest numbers of parking spaces on-site, and this is consistent with their comparatively large site populations. In general, parking is largely restricted to employees or students on a permit system. Fees for permit parking vary from free (City College) to $25 per month (St. Mary's).

At all institutions, on-site parking is observed or reported to be heavily utilized during peak periods, and there is parking spillover onto neighboring streets. The amount of spillover varies greatly depending in large part on the net deficiency of on-site parking and availability of alternatives. Only 3% of the Veteran's Administration employees report that they usually park on-street, whereas over 70% of those of Children's, Mt. Zion and St. Mary's Hospitals park on-street.

PUBLIC TRANSIT SERVICES AND USAGE

The various institutions share a common problem of being located away from the downtown focal point of local and regional transit service. As a result, although all of them have at least one transit route providing direct service, connections to some areas of the City and to some regional transit systems are presently inconvenient and time-consuming.

Table 6 compares selected aspects of transit service and utilization at the institutions. City College students exhibit the greatest proportion and number of transit riders, with over half arriving either by MUNI or BART. This is in part because almost all students reside in the City and also because several MUNI lines and BART are within walking distance of campus. For most other institutions, less than ¼ of the employees and students commute by transit. Transit usage is particularly low at Veteran's Administration (which is poorly located with respect to transit), City College (employees only) and Kaiser Hospital.

Table 4
SINGLE OCCUPANT AUTO DRIVERS BY RESIDENCE LOCATION

	San Francisco		North Bay		East Bay		Peninsula		All Areas	
Employees	No.	Pct.*	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.
Children's	NA	NA	NA	NA	NA	NA	NA	NA	810	65
Kaiser	600	57	150	60	80	50	190	63	1,020	58
Marshal Hale	130	51	20	59	20	59	55	80	225	56
Mt. Zion	780	60	160	80	150	63	250	90	1,340	65
PMC	490	44	150	71	100	62	120	66	860	52
R.K. Davies	310	50	40	82	40	52	100	67	490	54
St. Mary's	530	51	100	52	110	63	180	76	920	56
S.F. General	1,090	63	160	73	270	64	330	77	1,850	66
Veteran's	630	69	80	44	80	40	300	83	1,090	66
Fireman's Fund	270	53	110	28	30	18	120	70	530	42
City College	NA	NA	NA	NA	NA	NA	NA	NA	1,040	86
SF State	680	51	160	74	230	63	620	81	1,690	63
UCSF	NA	NA	NA	NA	NA	NA	NA	NA	2,460	43
USF	300	46	80	72	120	53	110	70	610	51
Total Employees	5,810	55%	1,210	59%	1,230	55%	2,375	76%	14,935	57%
Students										
City College**	5,250	35	--	--	--	--	250***	52***	5,500	36
SF State	7,230	48	1,160	83	2,160	74	4,150	88	14,700	61
UCSF	NA	NA	NA	NA	NA	NA	NA	NA	590	25
USF	2,480	48	180	67	320	59	760	85	3,740	54
Total Students	14,960	43	1,340	80	2,480	72	5,160	85	24,530	50

* Single occupant auto drivers as a percent of all employees in the residence area. (e.g., for Children's - 810 single occupant auto drivers divided by 1250 employees from Table 3 equals 65 percent.)

** Day Division

*** For all areas outside San Francisco

Table 5

PARKING CHARACTERISTICS

	Number On-site Parking Spaces			Parking Fees					Percent Drivers Who Park On-street	
	Unrestricted open to public	Restricted	Total	Visitor (Hour)	Visitor (Maximum per day)	Employee (Monthly)	Student (Semester)	Physician (Monthly)	Employees	Students
Children's	365	155	520	$ .65	$2.65	--	--	Free	72%	
Kaiser	488	91	579	.25-1.00	7.00	$10.00	--	$10.00	24	
Marshal Hale	-	62	62	Free	Free	--	--	Free	95	
Mt. Zion	120	71	191	1.00	3.00	--	--	28.50	77	
PMC	160	316	476	1.10	2.50	22.50	--	Free	55	
RK Davies	169	121	290	.50	2.50	15.00	--	15.00	60	
St. Mary's	134	167	301	1.00	4.00	25.00	--	Free	71	
SF General	300	300	600	Free	Free	Free	--	Free	50	
Veteran's	750	250	1,000	Free	Free	Free	--	Free	2	
Fireman's Fund	-	516	516	Free	Free	Free	--	--	20	
City College	-	1813	1,813	Free	Free	Free	$ 7.50	--	0	48
SF State	2,500	900	3,400	.25	.25	33/yr	15.00	--	25	43
UCSF	942	1,216	2,158	.50	2.50	18.00	--	18.00	44	71
USF	-	834	834	--	--	30/sem	28.75	--	38	85

Table 6
MAJOR TRANSIT SERVICES TO PARTICIPATING INSTITUTIONS

	Percent employees Who Use Transit	Percent Students Who Use Transit	Direct MUNI Routes	MUNI Connection to: BART	G.G.T.	A/C	SamTrans	SF
Children's	16	-	1-California 55-Sacramento	Fair- Direct, Slow	Fair- Out of Direct.	Fair- Slow, walk	Fair- Slow, Walk	Remote
Kaiser	10	-	38-Geary 24-Divisadero	Good	Fair- Direct, Slow	Fair- Direct, Slow	Fair- Direct, Slow	Remote
Marshal Hale	20	-	1 -California 55-Sacramento	Fair- Direct, Slow	Fair- Out of Direct.	Fair- Slow, walk	Fair- Slow, walk	Remote
Mt. Zion	25	-	1 -California 2 -Clement 3 -Jackson 24-Divisadero 38-Geary	Fair- Direct, Slow	Fair- Out of Direct.	Fair- Direct, Slow	Fair- Out of Direct	Remote
PMC	23	-	22-Filmore 24-Divisadero 25-Bryant 55-Sacramento	Fair- Direct, Slow	Good	Fair- Slow, walk	Fair- Direct, Slow	Fair- Direct, Slow
RK Davies	20	-	N -Judah 24-Divisadero 43-Masonic	Good	Fair- Out of Direct.	Fair- Direct, Slow	Good	Poor- Transfer Required
St. Mary's	19	-	5 -Fulton 21-Hayes	Fair- Direct, Slow	Fair- Out of Direct.	Fair- Slow, walk	Fair- Slow, walk	Remote
SF General	14	-	19-Polk 35-Eureka 47-Van Ness	Fair- Direct, Slow	Fair- Direct, Slow	Remote	Fair- Out of Direct.	Remote
Veteran's	7	-	2 -Clement 18-Sloat	Poor- Direct, Slow	Poor- Out of Direct.	Poor- Slow, walk	Poor- Slow, walk	Remote
Fireman's Fund	15	-	1 -California 3 -Jackson 2 -Clement	Fair- Direct, Slow	Fair- Direct, Slow	Fair- Slow, walk	Fair- Slow, walk	Remote
City College	9	54	K -Ingleside 12-Ocean 36-Miraloma 15-Third 81-Bacon 28-19th Ave.	Good- Walk	Fair- Direct, Slow	Fair- Direct, Slow	Fair- Slow, walk	Fair- Direct, Slow
SF State	16	26	M -Oceanview 26-Valencia 17-Park Merced 70-Lake Merced 72-Haight	Good- Direct	Poor- Out of Direct.	Poor- Slow, walk	Good- Direct	Remote
UCSF	21	12	6 -Masonic 66-Quintara N -Judah	Good- Direct	Poor- Out of Direct.	Fair- Direct, Slow	Fair- Slow, walk	Remote
USF	18	20	5 -Fulton 31-Balboa 43-Masonic	Fair- Direct, Slow	Fair- Direct, Slow	Fair- Direct, Slow	Fair- Direct, Slow	Remote

RIDE-SHARING

Ride-sharing encompasses carpools, vanpools and buspools (subscription bus service). Carpools operate at all the institutions, but the degree to which carpooling is encouraged varies considerably. UCSF, for example, provides its own on-site rider-matching service, advertises and promotes its use aggressively and designates preferential spaces for carpools, and this is believed to be the most comprehensive effort among the various institutions at present. Vanpools are operated at three of the institutions. UCSF leases its own vans for vanpools, and has grown to include some 30 vans to date. Fireman's Fund has three vanpools, two of which are owner-operated and one of which is leased from Golden Gate Transit. Children's Hospital operates one vanpool. Buspools are operated only at UCSF (6) and Fireman's Fund (2), and all of these are operated by Golden Gate Transit.

CHAPTER III

POTENTIAL FOR TSM IMPROVEMENTS

The general process for determining potential for TSM improvements at each institution consisted of the following steps:

- Indentification of existing transportation deficiencies
- Review of employee perceptions about transportation alternatives
- Consideration of neighborhood concerns about parking
- Consideration of implications of MUNI Five-Year Plan
- Identification of candidate TSM measures
- Evaluation of TSM potential
- Setting of TSM goals

This chapter highlights some of the general results of the above process. However, since many of the conclusions are specific to each institution, the reader is referred to the individual TSM reports for a more complete description.

EXISTING TRANSPORTATION DEFICIENCIES

Assessment of existing transportation services at each of the institutions reveals the following general areas for improvement:

- Ride-Sharing: Although a few of the institutions promote carpools, vanpools and buspools, in general there is a need for incentives to be provided and made visible to employees who are otherwise able and willing to ride-share.

- Public Transit: Because the institutions are located away from the downtown focal point of local (MUNI) and regional transit service, they are difficult to serve well by transit. Although deficiencies are specific to each institution, in general it is observed that direct cross-town service (mainly north-south) is lacking for most institutions, and that in many cases access to BART, Golden Gate and other regional transit systems requires more than one MUNI transfer or else a circuitous trip.

- Parking: At all institutions, parking is heavily used and spillover onto neighboring residential streets occurs. In many instances, parking is provided free or at low cost to employees, and no preference is given to carpoolers.

- On-Site Marketing: In general, the institutions presently do little to inform employees of alternatives to the single occupant auto or to encourage their use.

EMPLOYEE PERCEPTIONS ABOUT TRANSPORTATION ALTERNATIVES

The travel survey asked a number of questions that dealt with employee attitudes and interest toward ride-sharing and transit. The expressed attitudes reflect a general interest in any form of ride-sharing provided work schedules would be satisfied. A major deterrant also involved the need for a car after work for other activities. A significant number of employees are dissatisfied with MUNI's reliability, service frequency, directness of service and in certain areas of the city, safety. (Many of these concerns are addressed in the proposed Five-Year Plan.)

NEIGHBORHOOD CONCERNS ABOUT PARKING

One of the major concerns being addressed by the TSM programs, and which affects the types of measures to be implemented, is that of parking spillover of institutional employees and visitors onto residential streets.

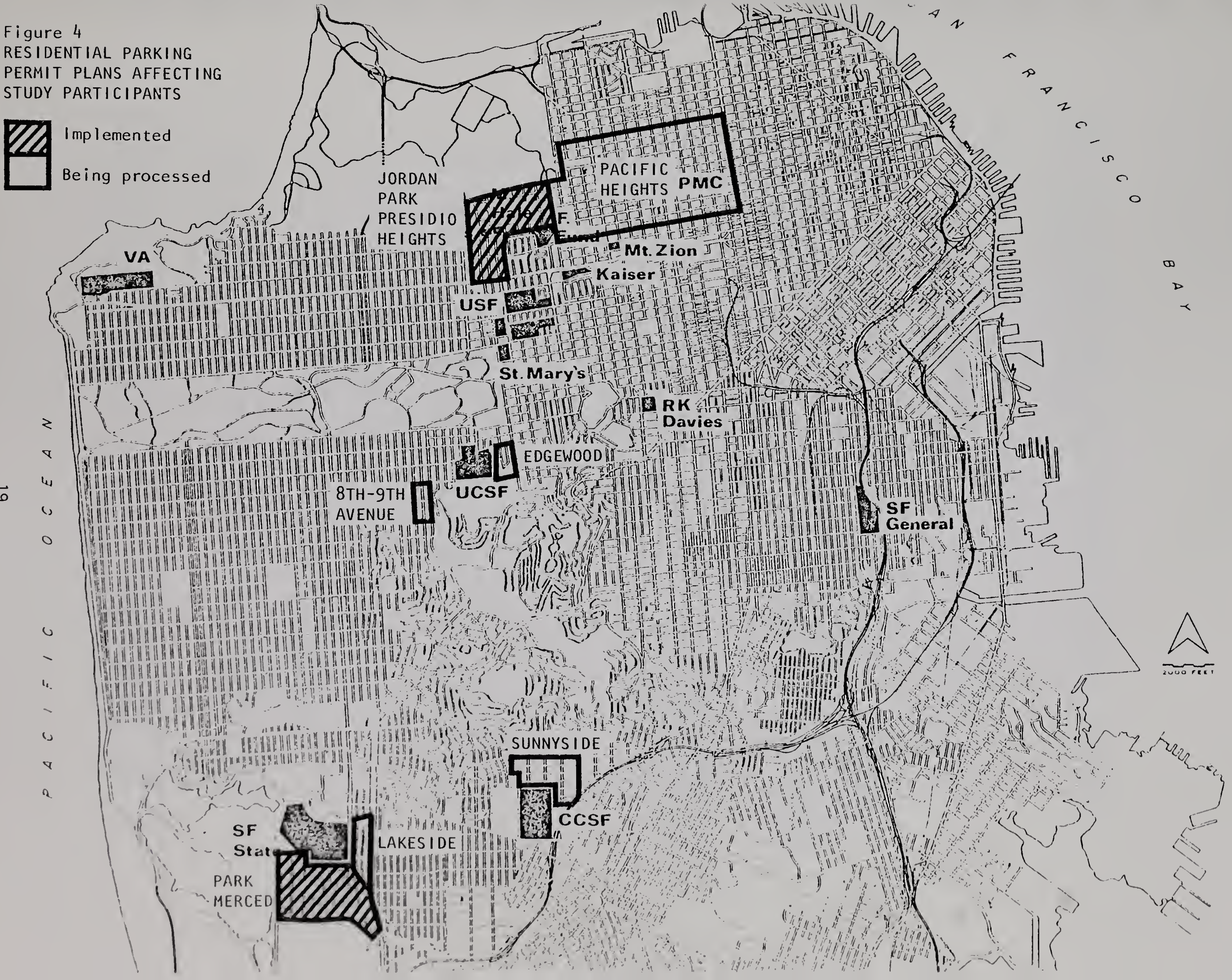
Figure 4 indicates neighborhoods in which residential parking permit plans have been recently implemented or are likely to be implemented in the near future in order to reduce parking intrusion.

The Jordan Park-Presidio Heights area impacts employee parking at Marshal Hale and Children's Hospitals. Fireman's Fund lies directly south of this area. Both of the hospitals have been working with the neighborhoods to develop a special high occupancy vehicle parking permit plan at the hospitals. The Park Merced area has also recently implemented a permit plan. This area lies just south of San Francisco State University and has has only a minor impact on parking for the institution.

The Pacific Heights area is likely to be the next area for implementation. This will directly impact the Pacific Medical Center. Permit plans are also being considered for the Lakeside area near San Francisco State and the Sunnyside area adjacent to City College. There has been talk of permit plans near the VA Hospital, St. Mary's and USF. However, these do not appear likely to be implemented in the near future.

The interest within San Francisco for neighborhood residential parking programs will probably continue to grow over the next few years. These programs have helped to focus the attention of institutions in the city on parking and transportation issues. Permit plans have provided a major opportunity for the institutions to meet with the neighborhoods, identify problems and work together to solve them. Although occasionally some of the institutions have found themselves in adversary positions the general level of awareness and willingness to work with each other represents an

Figure 4
RESIDENTIAL PARKING
PERMIT PLANS AFFECTING
STUDY PARTICIPANTS



opportunity to reduce mutual traffic and parking problems. Clearly the actions undertaken in conjunction with the TSM program will be positive contributions toward this goal.

IMPLICATIONS OF MUNI FIVE-YEAR PLAN

Major transit service improvements are scheduled or proposed in MUNI's Five-Year Plan (1979-1984), some of which could significantly benefit the institutions.

The on-going MUNI-METRO program includes refurbishing of all streetcar tracks, putting a new fleet of streetcars into service, and placing Market Street streetcar operation in subway. These improvements are expected to reduce travel time to downtown by at least five minutes and perhaps as much as 15-20 minutes, and substantially improve schedule reliability. Institution of MUNI-METRO service in subway is presently scheduled for early 1980, beginning with the N-Judah Line.

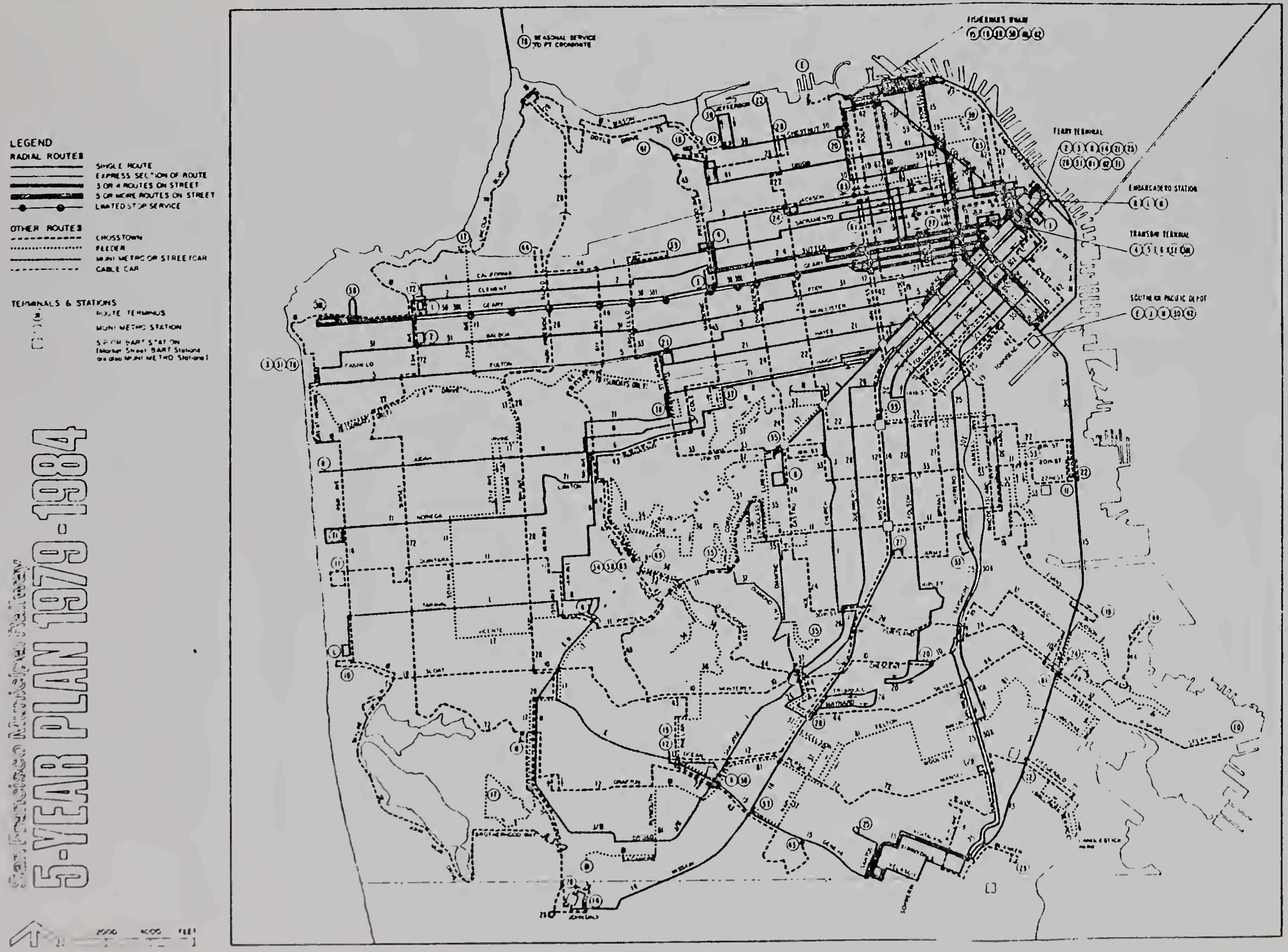
The Five-Year Plan also contains recommendations for a comprehensive restructuring of MUNI bus and trolley coach routes in an attempt to make more efficient use of existing equipment. Essentially, the existing radial system which focuses on the downtown would be re-oriented toward a "grid" system of routes which would concentrate more service into north-south and east-west service. This would greatly improve crosstown transit service and reduce service duplication to the downtown.

Proposed routes are shown in Figure 5. Major benefits to the institutions participating in this study include the following:

- North-south crosstown service to institutions in the north part of the City (Children's, UCSF, USF, etc.) would be greatly improved, providing no-transfer or one-transfer service to most parts of the City. Service from those institutions to the Mission District would be particularly upgraded.
- Frequencies on some major lines serving the institutions (e.g., Line 1 California) would be improved.
- Service from the Sunset District to some institutions (e.g., USF, St. Mary's) would be improved from 2 transfers to 1 transfer.
- More routes to the Richmond and Sunset Districts would be directed past SF State, and an improved direct connection between SF State and the Daly City BART Station (SamTrans transfer point) would be provided.

Implementation of the proposed Five-Year Plan is an important prerequisite to meeting the TSM goals of each institution. In the individual TSM plans recommendations are also made for further enhancements of MUNI service to the various institutions. These are summarized later in this report.

Figure 5
MUNI FIVE-YEAR PLAN
PROPOSED MIDDAY ROUTES



Source: Municipal Railway

CANDIDATE TSM MEASURES

For each institution, a comprehensive range of TSM measures was considered. They were grouped into several general categories for discussion:

- Ride Sharing -- Carpool incentives, vanpools, buspools

- Transit -- Modifications to MUNI Five-Year Plan proposals, or interim route changes, to improve service to specific institutions; special shuttle services to supplement MUNI

- Parking Management -- Measures to favor short-term parking, parking fee changes, parking priority, bicycle parking provisions, etc.

- Traffic Operations -- Low-capital cost measures to improve intersection operations, parking lot access/egress (City College Only).

- Marketing -- On-site transportation information dissemination, advertising, promotion of alternatives to the auto.

EVALUATION OF TSM POTENTIAL

The various TSM measures were evaluated in light of the nature of each institution and its work force, potential to resolve identified transportation deficiencies and potential for implementation at the institution, and inappropriate measures screened out.

Hospitals vs. Colleges

Basically, two types of institutions are participating in the study -- hospitals and colleges. Their transportation characteristics and opportunities differ sharply, and these differences are reflected in the individual TSM plans. Some of the differences are:

- Hospital employees are on reasonably consistent schedules, including three work shifts per day seven days per week in the case of nurses.

- Colleges, on the other hand, have very large student populations with attendance schedules which vary from day to day and semester to semester, and turnover is rapid.

- Campus faculty schedules also tend to vary from day to day and semester to semester.

- Students tend to have shorter commutes than others.

Even within the two types of institutions, there are differences in work schedules (City College, for example, is more of a "morning" campus than SF State), labor force composition and other characteristics. These differences have been reflected in the individual TSM plans, both in terms of goals

and recommended TSM measures. Despite these differences, there are some basic similarities, such as their common locations in residential areas, staff work schedules, etc., which can be taken advantage of in the programs, including joint ride-sharing services and the like.

Potential for Ride-Sharing

Three forms of ride-sharing were considered: carpools, vanpools and buspools. In all cases, the primary market for ride-sharing is staff members who work relatively fixed, uniform hours (essentially 8 AM - 5PM) and who commute fairly long distances (at least 10 miles each way in the case of vanpools and buspools, but desirably even farther).

Greatest "payoff", in terms of traffic/parking reduction per employee member, lies with buspools, but they also require the largest group of employees for formation. Therefore, buspool formation should be a cooperative effort of several institutions. Greatest potential for buspools appears to be among employees living in the North Bay (Marin and Sonoma Counties) and on the Peninsula (particularly Daly City and Pacifica).

Vanpools also appear to have potential at most of the institutions if sponsored on a cooperative basis. Primary market areas appear to be San Mateo County and the East Bay.

The areas with good potential for buspools and vanpools also have high potential for increased carpooling. However, promotion of carpooling should be deferred until the potential for the larger vehicles is determined. Aside from these areas, there is a significant market for carpooling in nearly all other Bay Area locations including San Francisco.

Public Transit Potential

Much of the potential for public transit ridership growth lies with the proposed MUNI Five-Year Plan. A 10 percent ridership increase to the institutions would not be unreasonable to expect. Beyond this, there are several other MUNI service improvements (either in addition to or as minor modifications to the Five-Year Plan) which have good potential for implementation:

- Reverse express bus services from downtown BART and AC Transit transfer locations to the cluster of institutions in the north part of the City.
- Limited stop service from the Outer Mission District to the cluster of institutions in the north part of the City.
- Limited stop service in the Nineteenth Avenue corridor to SF State.
- Localized route modifications in the vicinity of City College and USF.
- SamTrans scheduled service from Pacifica and Daly City to the central group of institutions as a future variation on buspool service.

- Increased SamTrans service to SF State, including formal bus stops and marketing.

- An express shuttle bus between SF State and the Daly City BART Station.

- Re-routing of Golden Gate Transit service onto Geary Boulevard.

- Additional on-site marketing of transit services, and provision of transit stop amenities at boarding points opposite the institutions.

Potential For Parking Management

A number of parking management measures were considered for each institution. They can ensure more efficient use not only of existing parking, but also ride-sharing and public transit. Although the evaluation of parking management measures is specific to each institution, a few generalities can be made.

- Priority parking for carpools and vanpools is desirable at all institutions. The primary consideration is that ride-sharers should be virtually guaranteed parking close to their destinations. Beyond this, parking rate discounts can also be given to encourage ride-sharing.

- Sudden changes in on-site parking policies which might simple divert more employee parking to adjacent residential streets should be avoided. Implementation of restricitons on long-term employee parking should be accompanied by visible improvements in transit and ride-sharing services.

- Parking restrictions should focus on employees who can most readily use alternative transportation services, rather than on visitors, handicapped drivers, etc.

- Adequate secure bicycle parking should be maintained to meet peak demands.

- Parking policies should be strictly enforced to ensure that the desired use of parking is made.

Potential For Joint Activities

Several of the TSM program elements must be implemented jointly by more than one institution in order to be effective. Cooperative actions which appear to have good potential include:

- Grouping of employees from more than one institution in buspools, vanpools and shuttle buses. The central cluster of institutions should promote and administer vanpools and buspools jointly in order to increase the target market. In particular, buspool formation will require joint efforts of several institutions in order to achieve the required minimum ridership levels.

- The institutions should support the MUNI Five-Year Plan and also lobby for further MUNI improvements as a single, coordinated body in order to have maximum clout.

- Full advantage should be taken of each other's experiences in implementing TSM measures, particularly in the areas of marketing, parking management, and ride-sharing promotions.

GOALS FOR THE TSM PROGRAM

It is important to set goals for the TSM Program which address the major transportation concerns at each institution and which are realistically achievable. Two concerns are most apparent: those of parking and traffic congestion on and near each institution. These concerns are shared by both the institutions' population and neighborhood residents. The problem is frequently an existing one rather than one keyed to any projected growth.

One obvious approach to these concerns is to construct more parking and to expand roadway capacity where needed. But in today's climate of fiscal constraints, environmental concerns and uncertainties about gasoline availability, this approach is generally not viable.

The primary goal of the TSM Program then, should be to reduce parking and traffic generated by the institution's population by attracting more commuters to non-auto modes. Specific target levels suggested for each institution are shown in Table 7. Essentially, the goal is for a reduction in the number of single-occupant auto drivers to each institution. This goal is highlighted since the private automobile is the predominant means of transportation to most institutions among both employees and students.

Given the number of existing transit users at most institutions a secondary goal of making transit service as convenient and safe as possible to existing riders is suggested. This also reinforces the first goal of attracting auto users to public transit.

Goals for transit ridership are based on improvements resulting from the proposed Five-Year Plan plus specific improvements beyond that plan such as the reverse express service between downtown and the institutions. Ridership goals for transit improvements at each institution were developed considering employee/student residence locations, current transit usage and employee/student attitudes toward transit.

Goals for ride-sharing are predicated on comprehensive, aggressive and continuing promotion of carpools, vanpools and buspools at each institution. The key factors used to establish ride-sharing goals at each institution include work schedule, residence locations, employee/student attitudes toward ride-sharing and existing ride-sharing levels at UCSF.

The goals as set forth for each institution are believed ambitious. They depend to some degree on factors outside the direct control of each institution -- MUNI improvements, for example. They are believed achievable, however, since they are based on estimates of market potential at each institution. The goals will take several years to accomplish since the

MUNI Five-Year Plan and other transit improvements require several years for implementation, and it may take continuous efforts over time to change commuter travel habits toward increased ride-sharing. But accomplishment of such goals will reduce parking needs and will visibly demonstrate each institution's commitment to reduce its impacts on adjacent neighborhoods.

Table 7
INSTITUTIONAL GOALS

	DRIVE ALONE				SHARED RIDE				TRANSIT				OTHER*			
	EXISTING		GOAL		EXISTING		GOAL		EXISTING		GOAL		EXISTING		GOAL	
	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.
Kaiser	1020	58	670	38	430	24	650	37	180	10	310	17	140	8	140	8
Marshal Hale	225	56	120	30	60	15	120	30	80	20	125	31	35	9	35	9
Mt. Zion	1340	65	840	42	100	5	430	21	480	25	650	32	90	5	90	5
PMC	860	52	570	34	230	14	460	28	390	23	450	27	170	11	170	11
R.K. Davies	490	54	270	30	150	18	330	37	180	20	220	25	80	8	80	8
St. Mary's	920	56	640	39	280	17	510	31	310	19	360	22	130	8	130	8
S.F. General	1850	66	1340	48	170	6	340	12	390	14	730	26	390	14	390	14
Veterans	1090	66	980	59	230	14	310	19	120	7	150	9	210	13	210	13
Fireman's Fund	530	42	330	26	490	39	650	52	190	15	230	18	50	4	50	4
City College Faculty/Staff	1040	86	980	81	30	2	80	6	120	10	130	11	20	2	20	2
Students	5500	36	5000	32	400	3	700	5	8400	54	8600	56	1100	7	1100	7
S.F. State Faculty/Staff	1690	63	1500	55	350	13	520	20	430	16	450	17	210	8	210	8
Students	14700	61	13300	55	1400	6	2100	9	6200	26	6900	29	1700	7	1700	7
U.S.F.	4310	53	2440	30	1380	17	1380	17	1540	19	2190	27	890	11	2110	26

---

* Walk, Bicycle

CHAPTER IV

RECOMMENDED TSM PLAN ELEMENTS

A comprehensive TSM Program is recommended for each of the 12 institutions tailored to the specific needs and constraints of the particular institution. For discussion, the elements are grouped as follows:

- Public Transit
- Ride-sharing
- Parking and Traffic Management
- Marketing and Incentives
- Program Administration
- Program Implementation

PUBLIC TRANSIT

Transit services serve a broad market. The basic philosophy for the institutional TSM plans is to continue to promote use of MUNI and other transit services in the region, but to also support other transit services where scheduled transit service is inadequate and where sufficient demand is demonstrated.

TSM activities related to public transit will require action by both policy level staff and by transportation brokers. The sizes of the institutions are such that individually they cannot expect to have a major influence on transit policies; however, working cooperatively they should be able to effect some changes beneficial to the entire group. This coordination between institutions to identify improvements and present a unified approach to transit agencies requires policy level staff to be involved. The transportation broker can expect to be more involved with promoting service that exists and providing information about it.

Recommendations for MUNI and other transit agencies to consider are detailed in the next chapter under the respective operating agency. The recommendations are highlighted below along with the institutional role in developing support for MUNI improvements. Additionally, several supplemental transit services are proposed for consideration by the institutions.

Support the MUNI Five-Year Plan

The Five-Year Plan will produce a more efficient, more direct, and in many cases, faster service than MUNI provides today. As public hearings are held that move toward implementation of the Five-Year Plan, each of the institutions should analyze the effects of the changes on its own employees and support, in these public hearings, those changes which benefit the institution.

Lobby for Other MUNI Improvements

In addition to supporting the Five-Year Plan concept, the institutions should formally request a number of other MUNI improvements which are in addition to or localized modifications to Five-Year Plan proposals. These include:

- Peak period reverse express bus service between the central group of institutions and downtown transfer locations to BART and AC Transit;
- Limited stop bus service (peak period only) from the Outer Mission District to the central group of institutions;
- Limited stop service in the Nineteenth Avenue corridor serving SF State and City College;
- Localized modifications to proposed Five-Year Plan routes in the vicinity of City College and USF; and
- Improved night time service and security at City College, SF State and USF for evening students.

New SamTrans Routes

The institutions should collectively request SamTrans staff to consider providing direct service between Pacifica and Daly City west of I-280 and the central group of institutions. The institutions should pursue scheduled service coordinated with the institutions' schedules operated as normal service following successful club bus operation. Operation of club buses would demonstrate the viability of such service. This approach is also discussed in the ride-sharing section.

SamTrans Route Extension

SF State should request additional regularly scheduled bus service north from the Daly City BART Station to at least SF State, should actively support such service before the PUC, if necessary, and should promote and facilitate the service on campus. SamTrans service should be well publicized on campus and bus stops should be formally designated.

Revised Golden Gate Transit Routing

Golden Gate Transit has in the past proposed to move its Civic Center-bound buses from Lombard and Bay Streets and operate instead on Geary Boulevard. This would provide service within several blocks of six institutions. This change should be jointly supported by the institutions which now have poor access to scheduled Golden Gate Transit service.

Supplemental Shuttle Services

To supplement MUNI service or provide interim service until MUNI Five-Year Plan route improvements are made, several shuttle bus services should be considered for implementation by the affected institutions:

- Hospital Shuttle to Market Street: Children's and Marshal Hale Hospitals have proposed to develop a shuttle service from those hospitals to the Market-Castro area for the interim period before implementation of Line 33 modifications of the Five-Year Plan. The route is shown on Figure 6. It closely follows the proposed Line 33 route, connecting to MUNI-METRO and various and other MUNI lines serving the central and southwest portions of the city. The route would operate at 20-minute headways in the morning and evening peak periods only. Stops should also be provided at USF, St. Mary's and Ralph K. Davies, and implementation should be a coordinated effort of the affected institutions.

- USF Shuttle to Geary Boulevard: In the event that Golden Gate Transit's Civic Center routes are relocated onto Geary Boulevard, a shuttle route connecting the USF main and Lone Mountain campuses to Golden Gate Transit and MUNI routes on Geary Boulevard should be considered. It could also be used for access to USF's underutilized Parking Lot L. It should operate during peak periods and in the evening.

- SF State/Daly CityBART Station Shuttle: SF State should initiate discussions with Stonestown for a combined Stonestown/SF State express bus connection to the SamTrans and BART transfer location at the Daly City BART Station (Figure 7). It could also facilitate joint use parking at Stonestown and SF State. The service should operate at least every 15 minutes, requiring two vehicles and a spare. It should be operated on an experimental basis, preferably as an interim service in the event of delays in implementing proposed Five-Year Plan modifications to MUNI Line 28.

Figure 6
PROPOSED SHUTTLE SERVICE
TO CHILDREN'S, MARSHAL HALE,
ST. MARYS, & RALPH K. DAVIES

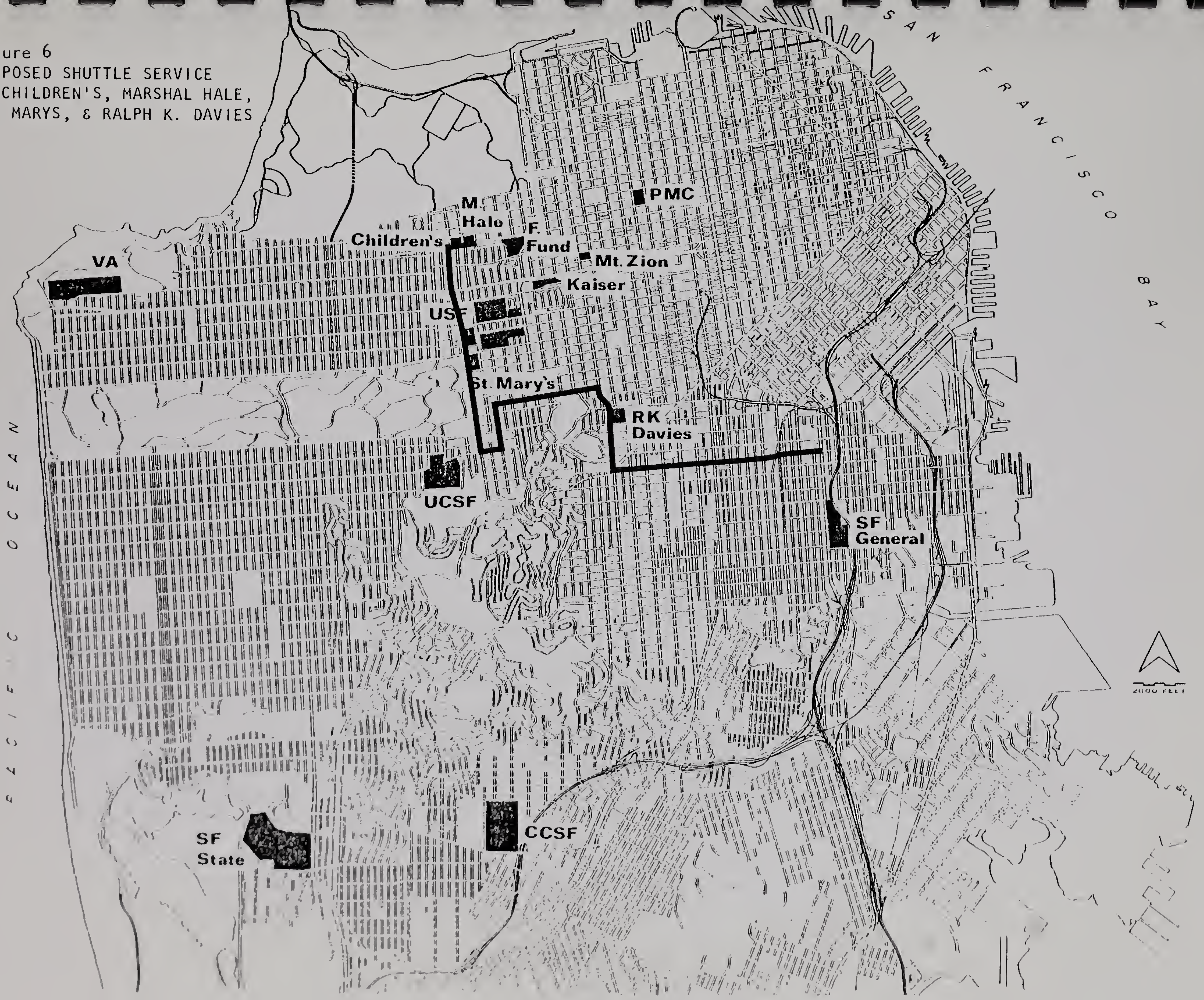
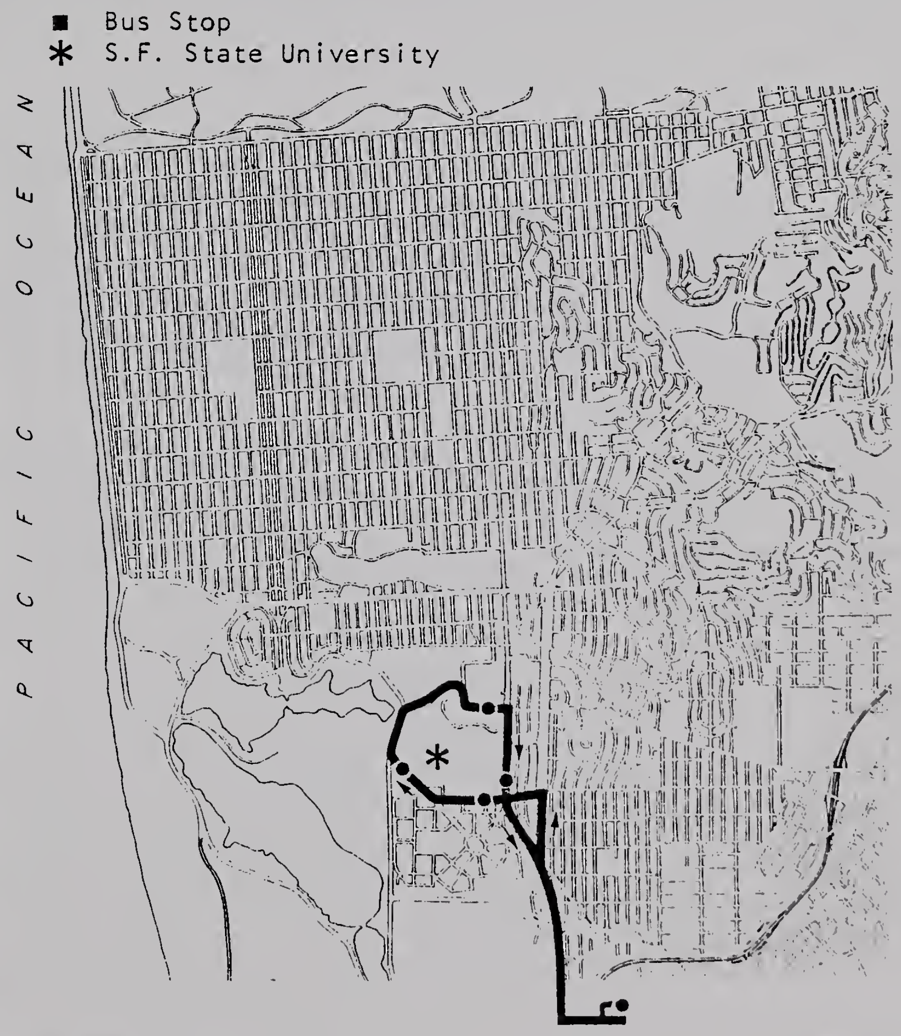


Figure 7
EXPRESS BUS - STONESTOWN/S.F. STATE TO
DALY CITY BART STATION



RIDE-SHARING

Three service types are recommended--buspools, vanpools, and carpools. In creating and promoting a ride-sharing program, it will be critical in those areas where buspooling or vanpooling is possible to promote those concepts first; otherwise carpooling may absorb those markets and leave an insufficient market for the larger vehicles. Therefore, buspools and vanpools should be promoted first in selected areas; if sufficient interest cannot be generated, carpooling should then be promoted.

Buspools

Buspooling should be promoted incooperation with several institutions. The initial buspooling action is the formation of an inter-institutional committee to accurately determine levels of interest in buspooling and initiate the necessary discussions with the two primary agencies, Golden Gate Transit and SamTrans. Initial activities should include meetings of eimloyees living in Marin and Sonoma Counties, with emphasis on San Rafael, Greenbrae, Tiburon, Larkspur, Mill Valley, Novato, Petaluma, San Anselmo, and Corte Madera to introduce the idea and explain its significant benefits.

For San Mateo County residents, it is also advisable to form an institutional coordinating group. The group should initially determine the degree to which their schedules can make joint-buspooling possible. Following this decision, meetings at the individual institutions should be conducted with the employees of each institution living in Daly City and Pacifica which are the primary areas of employee concentration in San Mateo County.

Because of the relatively short trip distance, the fact that SamTrans is in a relatively good financial situation, and that it does not currently have a buspool program, there are two options for service to the institutions. Service may be regularly scheduled with daily fares and several buses on a single route, or it may be club bus service, with each bus serving a distinct geographical area and a regular group of riders. These options should be explored with SamTrans, and they should be outlined to the employees in the initial meetings to determine which choice they prefer. In either case, it is important that the service be oriented directly to the institutions with no intermediate stops so as to minimize travel time and avoid direct competition with MUNI.

The coordinating group should work with SamTrans toward instituting buspooling service as the best way of demonstrating the real potential of such service. SamTrans personnel have indicated a strong interest in promoting transit, and should be receptive to an action-oriented plan. Peak-hour service from Pacifica and Daly City directly to the institutions should represent a good first step toward demonstrating the feasibility of regularly scheduled transit service from the Peninsula to the institutions.

Vanpools

The areas in which vanpooling appears to be most promising for initial implementation, based on the size of the market and travel distance, are San Mateo County and East Bay. Vanpooling should be done jointly with several institutions to increase ridership potential.

For these locations, RIDES FOR BAY AREA COMMUTERS (RIDES) is an excellent resource and has developed a plan for promoting, forming and supporting vanpool groups. It is recommended that RIDES personnel be brought together with employees living in the areas listed above to help form groups of sufficient size. RIDES will also be able to help in coordinating formation of joint institutional vanpooling.

Carpools

The areas listed above as having highest bus- and vanpooling potential also have good carpool potential; however, promotion of carpooling in these locations should be deferred until the potential for use of the large vehicles is determined. However, there is a considerable market besides these areas where carpooling can have an impact. Nearly all Bay Area locations including San Francisco have potential for carpool formation.

An "active" process is recommended to encourage carpools. The transportation broker at each institution should first assemble a list of people with common working hours and places of residence. After compiling the list, the broker should arrange a "coffee klatch" type of informal meeting to introduce to each other people with similar work schedules and places of residence. The idea is to break down barriers between people and create a congenial situation where people are encouraged to get together and also feel comfortable about the process. The broker would act as the organizer and motivator and take an active hand in trying to form groups. It is suggested that this first be performed for an area where the survey has shown a high level of interest in pooling and then extended to other areas. As potential carpool lists are complied, all employees in a residential area should be invited to participate in the program. Transportation brokers should introduce new employees to current staff who live near them and either are or might be interested in carpooling.

PARKING AND TRAFFIC MANAGEMENT

Parking management strategies were developed for each of the institutions based on the specific issues at the particular institution. Typically this element addresses:

- the need for priority parking for carpools and vanpools;
- the need for a balanced parking policy reflecting the needs of both employees and visitors;
- pricing policies for off-street parking which are consistent with parking management policies and provide incentives for carpooling;
- review of on-street parking controls and requests to the city for modifications as appropriate in keeping with the institutional parking management policy;
- review of the adequacy of secure and well located bicycle parking racks;
- institutions potentially impacted by residential parking permit plans should consider complementary plans to promote and facilitate high-occupancy vehicles including transit; and
- use of off-street parking at the institution should be effectively enforced.

In the vicinity of City College, traffic congestion is of considerable concern to both the campus and non-campus communities. Accordingly, roadway improvements are suggested at three locations in the vicinity of City College to improve traffic, transit and pedestrian safety:

- Ocean Avenue/Phelan Loop (MUNI turnaround)
- Ocean/Phelan/Geneva Intersection
- North Reservoir Parking Lot Entrance

MARKETING AND INCENTIVES

A number of measures can be used to promote the use of ride-sharing, transit, and other alternatives to the auto. Measures that are in use or should be considered for use at the institutions include:

- Information Aids - transportation packets describing transit services to and from the institution and ride-sharing applications. The broker should maintain periodic contact with the transit and ride-sharing agencies to assure that their information is current.
- Information Center - information displays at key access points for visitors and patients as well as employees.

- Orientation Briefings - discuss the TSM Program with new employees and work with them to present transportation alternatives so that they will not have to drive to work alone. This is the best possible time to bring an employee into the program, before his travel habits are formed.

- Transportation "Hotline" - maintain and publicize the transportation broker's telephone number for information and assistance on transportation.

- Recurring Publicity - keep employees aware of the program through periodic news releases, memos, etc., that relate success stories of other employees.

- Short-term Promotions:
    - Transportation Day - an opportunity to show employees possible literature, etc.
    - Fare Reductions - one-time free fares to promote "trying a new way to work."

- Financial Incentives - either short-term or continuing
    - MUNI Fast-pass discounts
    - Partial payment of vanpool or buspool costs

- Payroll Deduction - for vanpools or buspools.

- Sale of MUNI Fast-passes in a convenient location.

- Modify Work Hours - to allow employees to reschedule work hours upon request to facilitate ride-sharing.

PROGRAM ADMINISTRATION

Effective administration of the TSM Program will require five levels of support as outlined below.

Transportation Broker

This is a staff level position responsible for day-to-day management of the TSM Program and implementing and monitoring its various components. Specific responsibilities include:

- Develop and disseminate information aids and other marketing resources.

- Provide orientation and assistance to new employees.
- Work with RIDES, MUNI, SamTrans and other agencies to improve existing transportation services and develop new ones.
- Work with other institutions' transportation brokers to develop joint transportation services.
- Monitor effects of the program, including parking usage, etc.

Joint Institutional Coordination

Several of the TSM Program elements require coordination with other institutions. It is strongly recommended that both formal and informal joint institutional coordination be maintained and include:

- Periodic meetings of full joint institutional transportation group (composed of policy level administrative staff). Meetings should be held at least every six months to review program effectiveness and mutual issues.
- Monthly or bi-monthly meetings of joint institutional transportation brokers committee to review implementation status, exchange ideas and resolve individual problems.
- Informal contacts between institutions at broker and administrator levels to promote joint TSM projects.

Employee Transportation Committee

Fundamental to the success of TSM programs is a strong top-level management commitment to the program. Each of the participating institutions has demonstrated such a commitment through designation of a Transportation Broker and participation in the study. Continued commitment of management in support of the program, support to the Transportation Broker, willingness to consider policy changes such as work schedules, lobbying for TSM related improvements from MUNI and other related agencies, and developing financial support are necessary to achieve the desired results from this program.

Program Monitoring and Evaluation

Two separate types of monitoring evaluation efforts should be undertaken:

- Regular Progress Reports. These should be quarterly narrative reports which indicate the number and functions of staff assigned to the TSM program; their activities and accomplishments toward program implementation; meetings of interest; and the number of employees who have availed themselves of the services.

- Follow-up Survey. A follow-up survey of employees similar to the Spring 1979 Survey performed in this study should be performed in or about Spring, 1980. This would help to measure initial effects of the TSM program on emoloyee travel. It will be funded through the joint institutional TSM program. The 1980 survey would be particularly useful in that it would coincide with the 1980 U.S. Census of Population and Housing.

PROGRAM IMPLEMENTATION

Key issues related to implementation are who is responsible, when should it be implemented and how much will it cost.

Responsibility

Program implementation must be a coordinated effort of several agencies.

- Prime responsibilities rest with the individual institution for carpool promotions, all on-site parking management, and program marketing and administration.

- Support is available from RIDES and Golden Gate Transit in the areas of carpool rider-matching and vanpool formation.

- MUNI is responsible for its Five-Year Plan but will need active support from all institutions.

Schedule

The schedule has been divided into three phases:

- Immediate Action

  All of the ride-sharing promotions and marketing of transit efforts can begin immediately. The Transportation Broker can begin to publicize the transportation hotline. At a policy level, coordination among the various institutions to promote carpools and vanpools can also begin. Creation of the employee transportation committee can also be started promptly.

- Short Range

  A number of program elements depend on other agency resources, particularly MUNI and SamTrans, for further planning and discussion. Although each institution should take immediate action in requesting and lobbving for the improvements, it is not likely that implementation could occur until the second or third year of the program. This includes the MUNI Five-Year Plan route modifications, reverse express service to the Transbay Terminal and BART, and rerouting of Golden Gate Transit lines onto Geary Boulevard.

- Long Range

  Some elements of the MUNI Five-Year Plan, such as the new Route 33, will require electrification and have thus been deferred to the end of the Five-Year Plan. Proposed modifications and additions to those elements of the Plan can also expect to require 3-5 years for implementation.

Costs and Funding

Many of the costs associated with transportation improvements will be funded by others. These include the MUNI, SamTrans and proposed Golden Gate Transit improvements and ride-sharing promotions.

Other programs such as vanpooling and buspooling should be self-supporting unless the institution chooses to subsidize these programs.

The primary costs to the institutions would involve funding the Transportation Broker and related clerical support to the program. Additionally, the institutions are the primary source of funding for any supplemental transit services, on-site signing, and promotions tailored to the institutions.

CHAPTER V

AREAS FOR PUBLIC AGENCY ACTION

This chapter provides a checklist of TSM measures which involve implementation actions by public agencies. The following agencies are included:

- Municipal Railway (MUNI)
- San Francisco Department of Public Works
- SamTrans
- Golden Gate Transit
- RIDES FOR BAY AREA COMMUTERS

Although implementation responsibility lies with the public agencies listed, the various institutions, working on a coordinated basis, must be prepared to request and lobby for the improvements as well as to work directly with the agencies through the respective transportation brokers.

MUNICIPAL RAILWAY

Transit improvements proposed for the institutions are based on three main considerations:

1) Service should be direct and non-stop or as nearly so as possible.
2) Service should be related to a group of institutions, rather than just one.
3) Service should be well and regularly promoted to employees.

Attitudinal responses by employees indicate that direct and non-stop service is particularly attractive to those who currently drive alone. Other characteristics such as service frequency, guarantee of a seat or cost are less important.

Analysis of the combination of work hours and residential locations makes it clear that the greatest potential for improvement both in terms of implementation feasibility and ridership involves several institutions working together.

The changes which MUNI will be making in the coming 5 years make it important to continually keep employees aware of the new opportunities to use transit. The following paragraphs discuss a number of transit ideas based on these considerations and which appear to have potential value for many of the participating institutions.

1) Reverse Express Bus Service From East Bay Connections

At the present time, MUNI's service to downtown is heavily directional: inbound in the morning and outbound at night. For example, on Route 38, approximately 50 buses are scheduled inbound while less than 40 are scheduled outbound between 7 AM and 9 AM. This pattern will be continued under the proposed Five-Year Plan. The buses not scheduled outbound either deadhead to the start of the inbound trip or return to the garage. These buses, and others from other lines, represent a significant opportunity for improved transit to the institutions at little marginal cost. A reverse express system from the Transbay Terminal and downtown BART could cut up to 10 minutes from the current scheduled local service. Figure 8 shows one alternative for providing 2 routes to serve eight institutions. Both routes would start at the Transbay Terminal and stop at Pine and Market Streets to serve the BART Embarcadero Station. One route would travel non-stop via Pine and Webster Streets to Pacific Medical Center and then continue on Sacramento, Fillmore and California Streets to serve Fireman's Fund, Marshal Hale, and Children's Hospital. The second would follow Pine, Fillmore, Geary, Masonic, and Fulton Streets stopping at Mt. Zion, Kaiser, USF and St. Mary's. The return trip would follow essentially the same routes except that Bush Street would be used for the express portion of the runs, and it would follow Montgomery Street, stop at the Montgomery Street BART Station, and continue to the Transbay Terminal via Market and First Streets.

The market for this service includes a total of 1,150 employees who work at the eight institutions and live in the East Bay, of whom 240 currently use transit and 580 currently drive alone.

2) Limited Service From The Outer Mission

One of the weaknesses of MUNI's proposed Five-Year Plan is that all limited and express services, including BART, are oriented toward the downtown. North-south crosstown express service that penetrates the locations of most of the institutions does not exist today and will not in the planned future.

While there is undoubtedly a demand for such service that goes well beyond the institutions, the several hospitals alone appear to justify the trial initiation of such a connection. Investigation of survey and residence location information indicates significant numbers of employees living in the Ingleside, Outer Mission and Mission Districts. Figure 9 suggests one alternative route for providing express service from these areas. The route shown is strongly institutionally oriented, and is suggested to run unidirectionally in the peak hours: inbound to the institutions in the morning and outbound at night.

The on-board time between Marshal Hale Hospital and the end of limited service at Mission Street and I-280 would be approximately 25 minutes with an additional 17 minutes to the end of the line. An estimated five buses would be required for 15 minute headway service assuming that they would be dead-headed in the off-peak direction.

Figure 8
POTENTIAL ROUTES FOR
EAST-WEST REVERSE
EXPRESS COMMUTE SERVICE

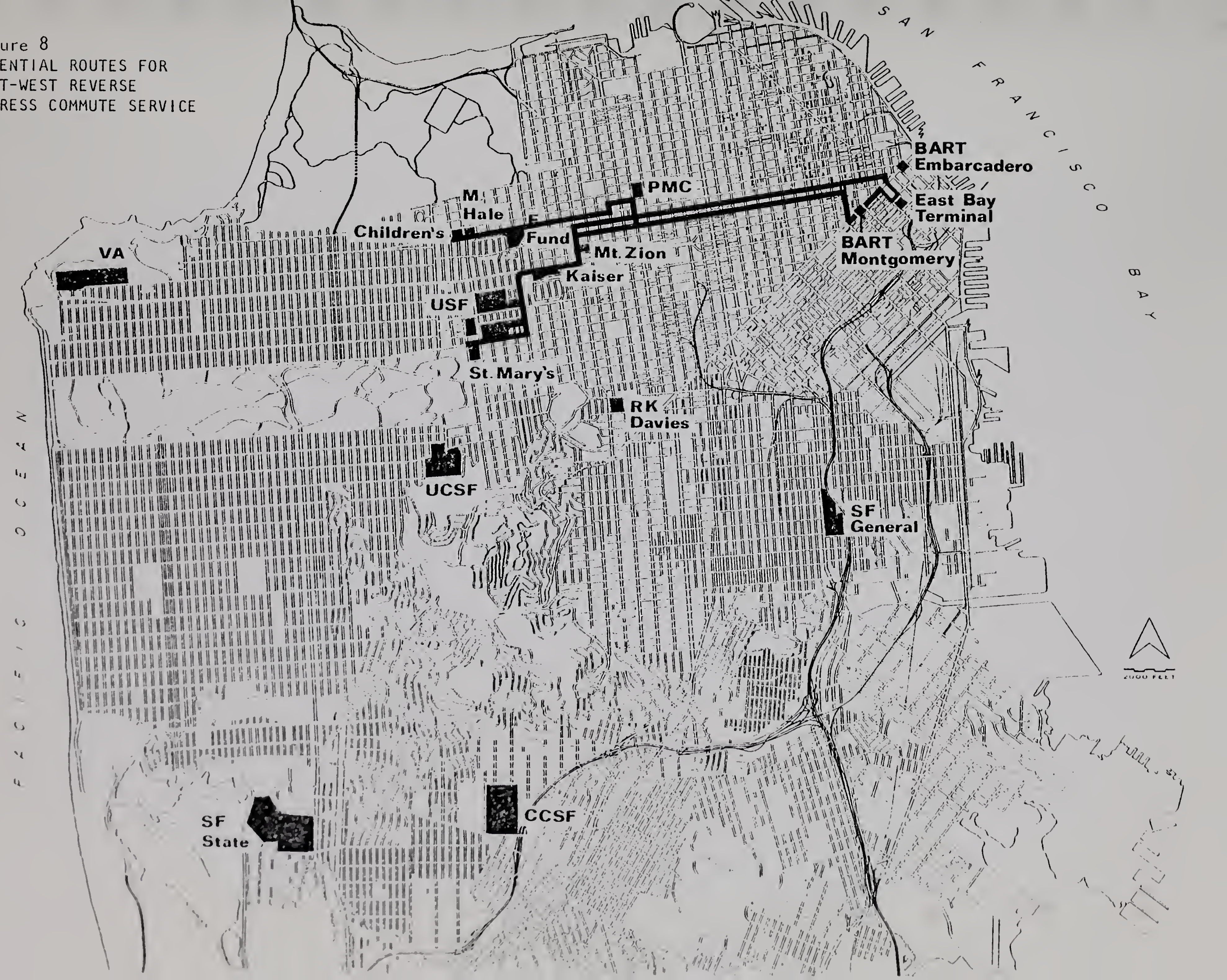
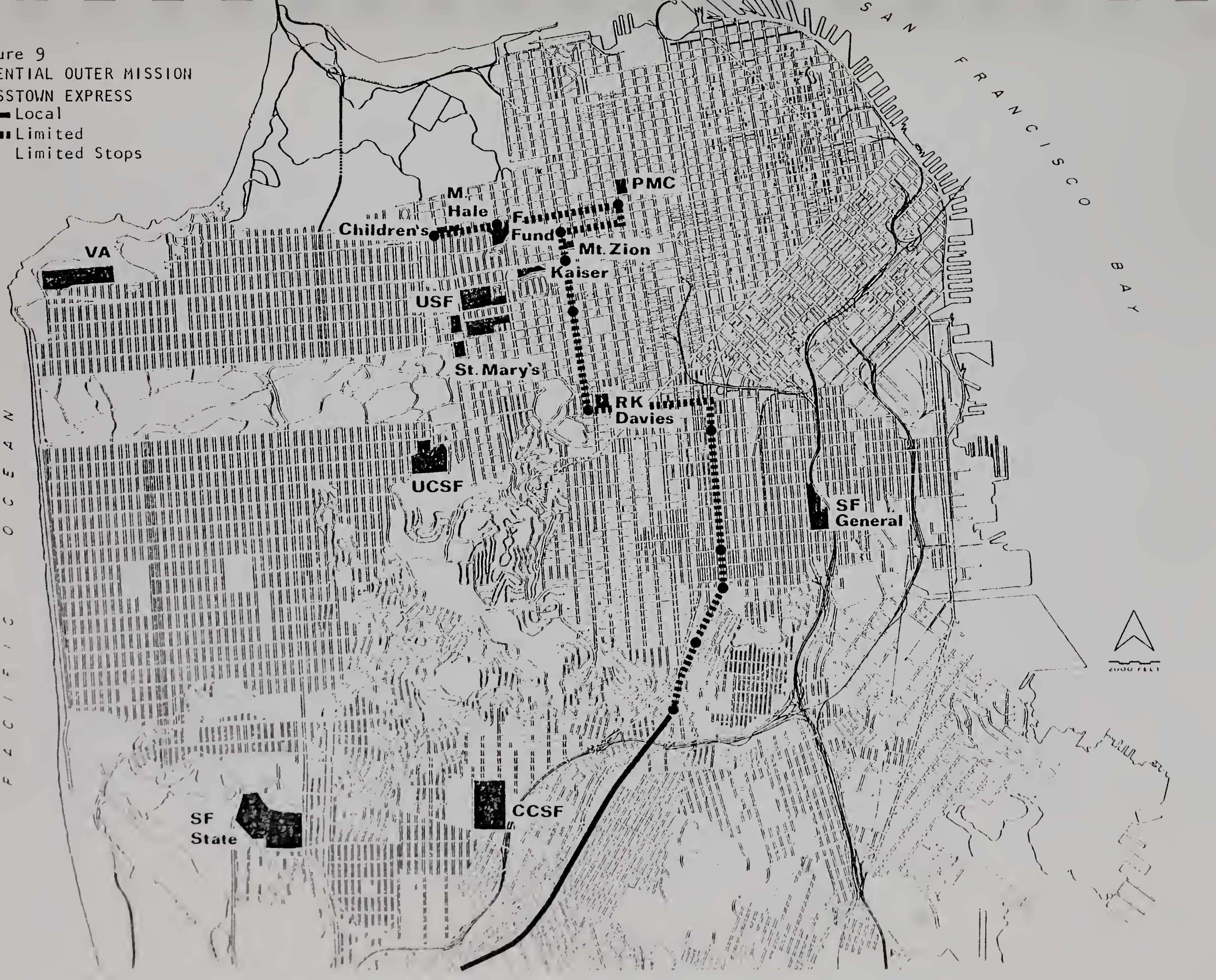


Figure 9
POTENTIAL OUTER MISSION
CROSSTOWN EXPRESS

━ Local
▮▮▮ Limited
● Limited Stops



Institutions which would be directly served by the route include Ralph K. Davies, Kaiser, Mt. Zion, Pacific Medical Center, Marshal Hale, Children's and Fireman's Fund. USF and St. Mary's could use this line in conjunction with a transfer to MUNI's proposed Route 5-McAllister-Fulton.

The market for this service includes 885 employees in the Outer Mission and Mission Districts, of whom 510 currently drive alone.

3) Extension of Route 24-Divasadero

At the present time and in the Five-Year Plan, Route 24-Divisadero terminates at Fillmore and Jackson Streets. Extending this route into the Marina along Fillmore Street would benefit Mt. Zion, Kaiser, and Ralph K. Davies Hospitals by providing direct service to the Marina. Pacific Medical Center would also benefit by improved frequency of service between the hospital and the Marina, as well as an improved connection to Golden Gate Transit.

Also in regard to service along Fillmore Street, the connection between MUNI and Golden Gate Transit is quite poor, requiring a one-block walk as part of the transfer. It is suggested that MUNI install bus stops in both directions on Fillmore Street at Lombard Street to make the transfer more convenient.

4) Modify Route 33-Stanyan

Under the MUNI Five-Year Plan, the revised Route 33-Stanyan line would provide an important direct link to the Mission District, the J, K, L, and M light rail lines and areas immediately north and south of USF and St. Mary's. However, the plan as now constituted would leave Route 33's point of closest approach to USF one hilly block from campus. The service would likely be significantly more attractive if routed directly past the campus on Stanyan (no hillclimbing for walkers, psychological motivation of "doorstep" pickup, less exposure to inclement weather). It would still provide direct service to St. Mary's Hospital and still avoid the northerly part of Stanyan (where residents have expressed opposition to transit routing on that street) by transitioning to Arguello via Turk (rather than via Fell in the Five-Year Plan as proposed).

5) USF - St. Mary's Hospital Bus Stop on Route 16 Express

This proposal involves simply providing a stop on this Sunset District express service which passes directly by these institutions on Fulton Street. With this stop USF and St. Mary's might have reasonable expectations of achieving a transit ridership rate from persons residing in the Sunset District similar to that now exhibited by commuters from the Outer Richmond, i.e., a doubling of transit rides to USF and St. Mary's from the Sunset.

6) Extend Time Period of Route 31 Full Service

This is simply an interim measure until proposed Five-Year Plan changes to Routes 5 and 31 are implemented. Initiation of full "to ferry" service a couple runs earlier in the morning and maintaining it a couple runs later in the evening would provide single transfer service for persons coming from the

Transbay Terminal to an 8 AM class at USF, an early evening class or returning to the Terminal from USF soon after 5 PM. But once the Five-Year Plan is implemented, revisions on the downtown end of Routes 5 and 31 do precisely what this proposed adjustment is intended to do.

7) Reroute Existing Line 28 to 19th Avenue

Figure 10 shows a proposed rerouting of Line 28 to bring service on this major route closer to SF State. It involves shifting a short segment of the route from Junipero Serra Boulevard to 19th Avenue opposite campus. This would be an interim rerouting for the period prior to modification of present Lines 28 and 72 as called for in the Five-Year Plan. It would benefit all SF State travelers who live in the Richmond and Sunset Districts (20% of the students; 15% of the employees) by eliminating a 3-block walk. It would also provide an alternative bus connection from SF State to the Balboa Park BART Station as a supplement to Line 26. To facilitate the rerouting, paving of the existing southbound streetcar stop at 19th/Holloway would be required so that southbound buses could turn left from 19th Avenue to Holloway. This rerouting is recommended for early action in advance of implementing the Five-Year Plan.

8) Route 28 - Limited Stop Service

It is recommended that MUNI explore the concept of limited stop service for Route 28 along 19th Avenue during peak periods of travel to and from SF State as an early action. As shown in Figure 11, stops would be made only at transfer points with east-west MUNI routes and major generators such as Stonestown and SF State. On these runs, service should remain on 19th Avenue rather than going into Stonestown. The service would reduce travel time to and from SF State and encourage the one-transfer trip from the Richmond, Sunset and Parkside Districts, wherein over 5,000 SF State commuters live. It would incur no cost to MUNI and could be continued with the Five-Year Plan.

9) Improved Service To City College From The West

Greatest potential for increased transit ridership to City College is from the western portion of the City. This area houses 30 percent of all students, and has the highest proportion of auto usage to City College at present. The Five-Year Plan will not improve transit routing to this area.

It is recommended that MUNI improve transit service from campus to the Parkside, Sunset and Richmond Districts in conjunction with the Five-Year Plan reroutings. Three alternatives have been identified:

- Interim limited stop service on existing Line 28 (19th Avenue) (Figure 12).
- Limited stop service on proposed Line 72 (Sunset Boulevard) and/or proposed Line 43 (Masonic) (Figure 13).
- Flip-flop south ends of proposed Lines 28 and 72 so that Line 28 continues to serve City College, and Line 72 serves Daly City BART Station (Figure 14).

Figure 10
LINE 28 ROUTE CHANGE

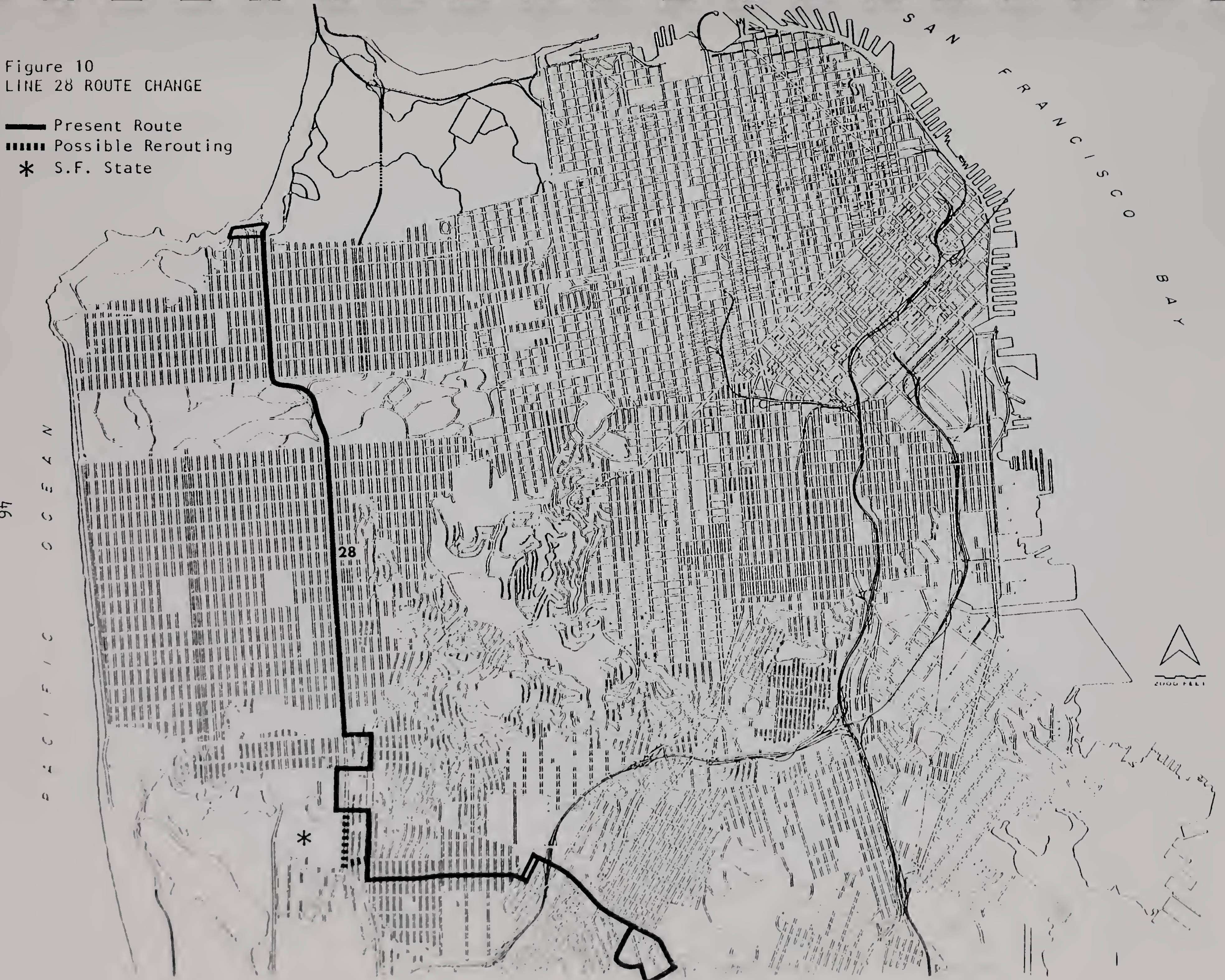


Figure 11
POSSIBLE LIMITED STOP SERVICE
ON MUNI LINE 28

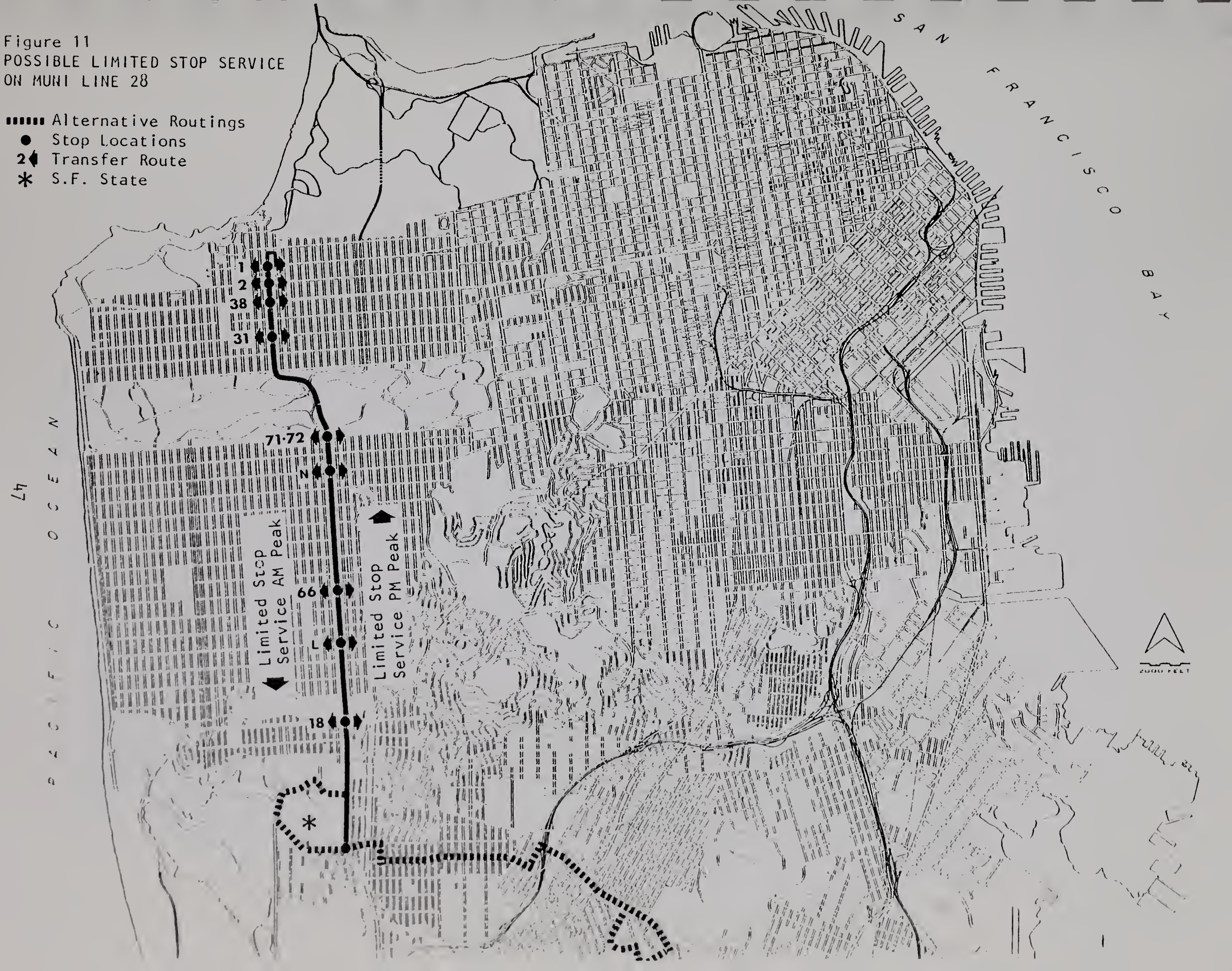


Figure 12
POSSIBLE LIMITED STOP SERVICE ON MUNI LINE 28

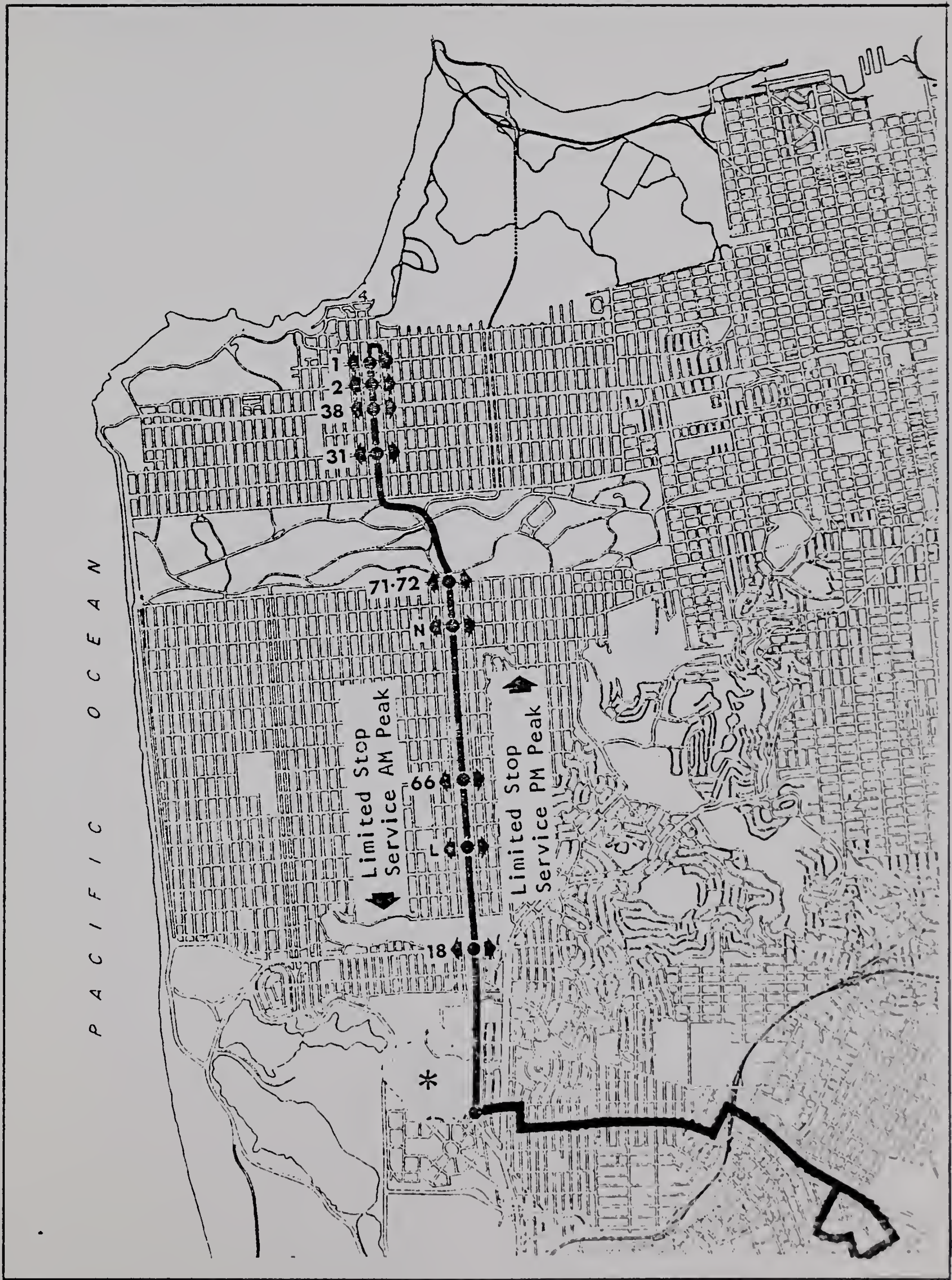


Figure 13
ALTERNATIVE LIMITED STOP ROUTES TO CCSF
(Five-Year Plan Routes 72,43)

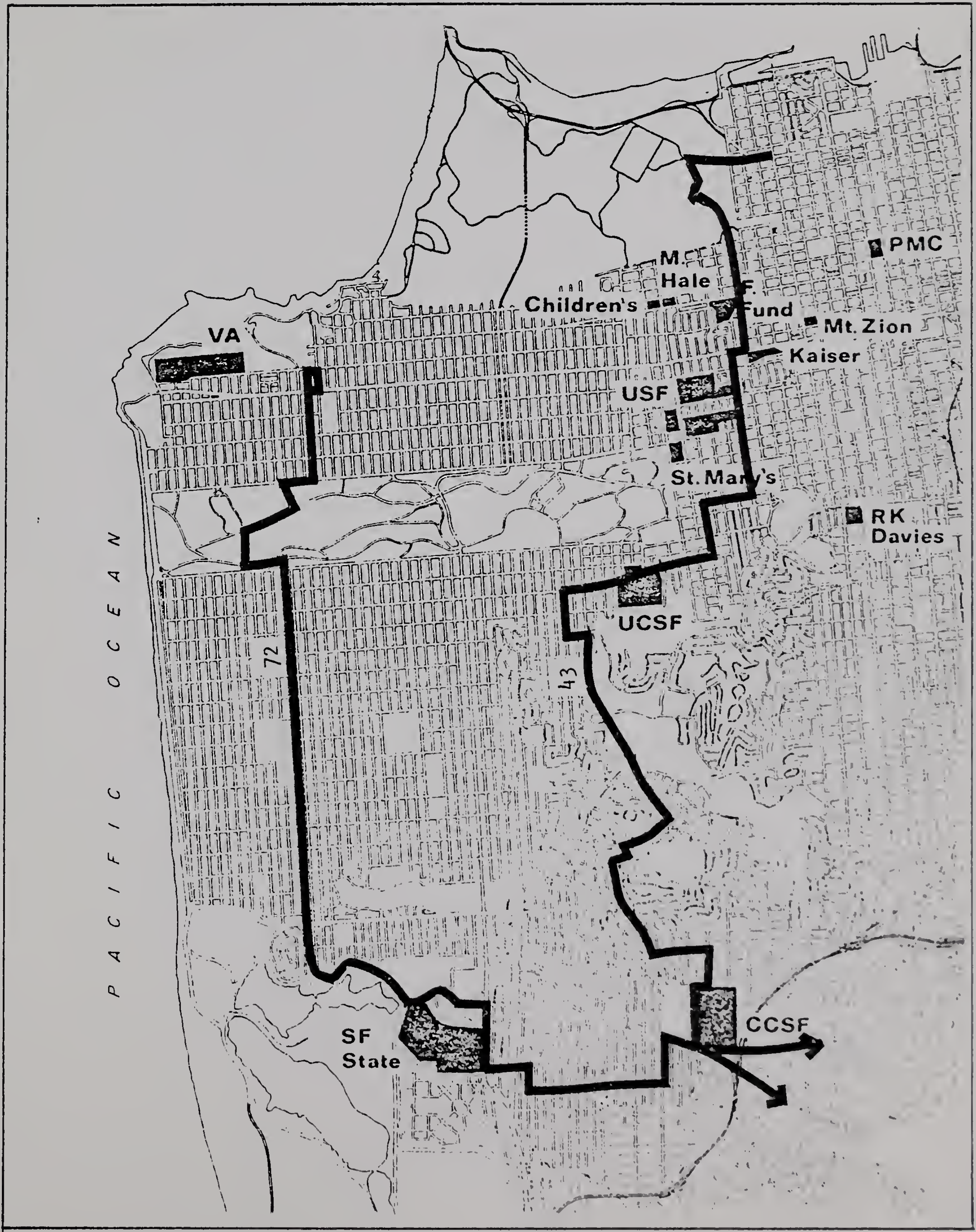
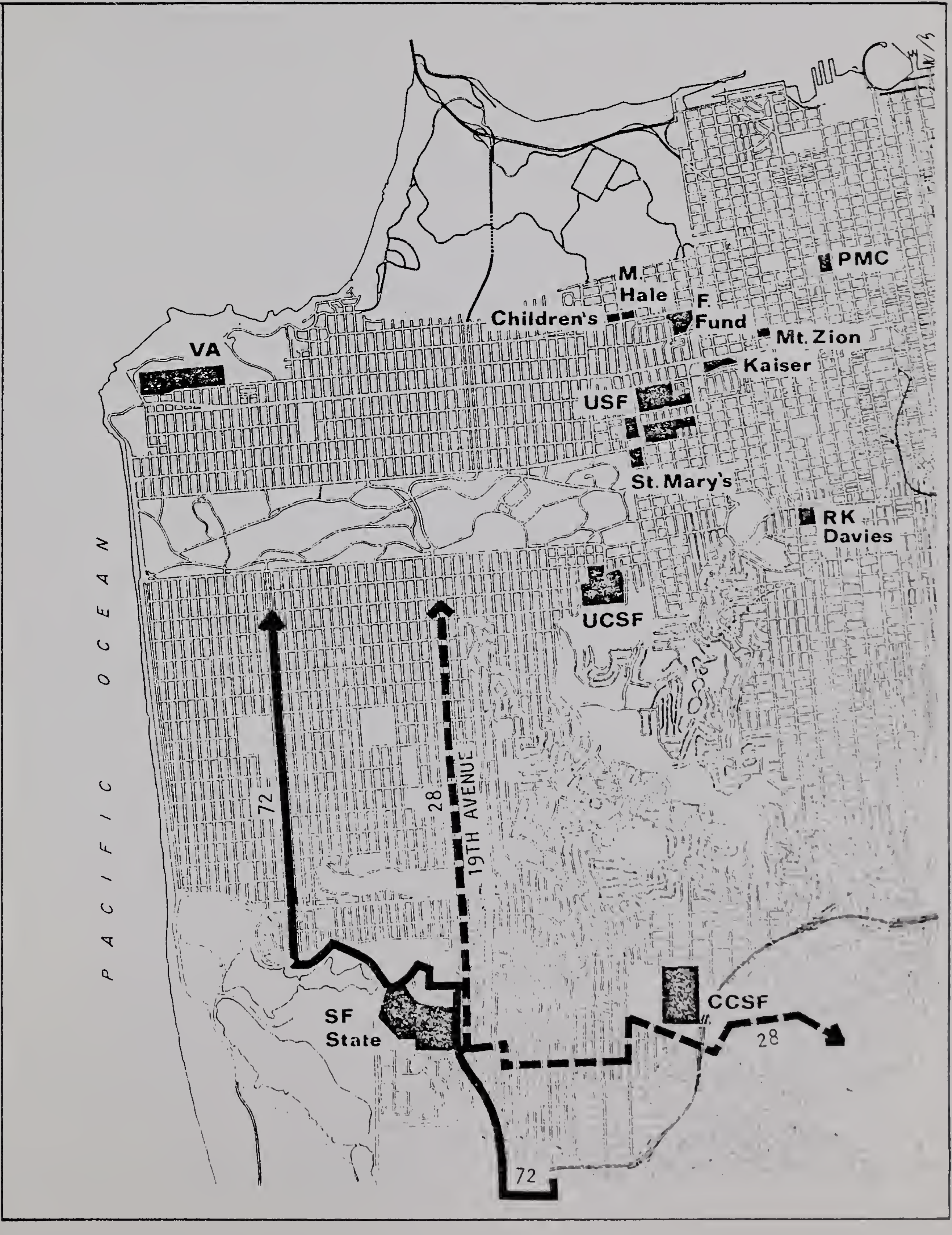


Figure 14

REVERSAL OF SOUTH ENDS OF PROPOSED LINES 28 AND 72



These and other possible reroutings should be carefully evaluated by MUNI for their system-wide effects, and a plan developed to improve City College service fromthe western part of San Francisco.

10) Reroute Line 81 Bacon

MUNI should maintain the existing Line 81 route along Ocean and Geneva Avenues opposite City College rather than rerouting it to Grafton and Mt. Vernon Avenues as currently proposed. The potential ridership from City College is believed greater than that from the small neighborhood served by the Grafton/Mt. Vernon route.

11) Improve Evening Transit Service To SF State

At present, one-sixth of the students attend evening classes at SF State, with classes running as late as 10:00 PM. This population is not well served by transit. M Streetcar service to SF State is discontinued after 7:00 PM requiring a bus ride to West Portal and transfer. Frequencies on most other lines serving SF State are reduced, and Line 28 requires a 3-block walk off campus. Evening peak travel at SF State involves up to 4,000 students.

It is recommended that MUNI increase service frequencies, extend the M-Oceanview Line, and reroute Line 28 to 19th Avenue at least during the peak evening arrival and departure times. This would marginally increase MUNI operating costs but would not likely require any additional equipment.

12) Improve Evening Transit Service To City College

Given the large number of evening division students (9,300) and their relatively low usage of transit (22% of the evening division students as compared to 55% of the day-time students), improvements to evening transit service are warranted. The following improvements are recommended:

- Concentrate more transit service into the Ocean Avenue streetcar stop opposite City College. This should include rerouting of trolley coach Line 12 into the stop, and perhaps also reroute Line 15 and 28 evening service along Ocean Avenue.

- Improve lighting, weather protection and security at that transit stop location, as well as the pedestrian route from campus. This may involve assignment of City College and MUNI security personnel, particularly for the evening peak departure times.

13) 19th Avenue/Holloway Transit Stop Improvements

It is recommended that MUNI and the Department of Public Works engineer, fund and construct modifications to the 19th/Holloway intersection which would facilitate improved transit operations and accessibility. Improvements should include the following:

- Reconstruct southbound streetcar stop for buses turning left from 19th Avenue to Holloway Avenue, as proposed for Route 72 of MUNI Five-Year Plan.

- convert auto pullout on southbound 19th Avenue to bus loading zones for proposed MUNI Lines 17, 18, and 28, and construct transit waiting shelter.

- Retain and possibly lengthen northbound bus loading zone on 19th Avenue for proposed MUNI Lines 17, 18, 28, and 72.

- Determine feasibility of extending sidewalk area on northeast corner by removing free right turn lane and island so as to provide space for northbound bus waiting shelter.

- Designate and sign SamTrans bus loading zones for northbound and southbound buses. This may entail lengthening of the MUNI curbside loading zones or construction of separate loading areas by removal of some curb parking spaces. In any case, joint use should be made of the waiting shelters.

- For safety, install an additional pedestrian signal in the median of 19th Avenue on the north side of Holloway Avenue.

Essentially, this project should be packaged as a coordinated transit/traffic/safety project. It requires the cooperative action of both MUNI and the Department of Public Works. As a TSM project, Federal Aid-Urban (FAU) funding could be used to underwrite most of the project cost including its transit aspects.

14) Bus Shelters

MUNI is encouraged to place bus shelters and improve signing and route information at key bus stops for the participating institutions. It is true that the number of really inclement days in San Francisco are few. But being able to take transit conveniently even on bad weather days is crucial to achieving overall transit modal split goals. What a person who has a choice between auto and transit does on rainy days can frequently affect not just what happens on those few days but that person's overall commute mode choice habit. Getting soaked while waiting for the bus on a rainy day may be the motivation for a commuter who could be served by transit to obtain a parking permit. Once this is obtained, that person will drive every day, not just on rainy ones. So shelters, though actually needed on relatively few days, can play an extremely important role in helping people form transit-reliant commute habits.

DEPARTMENT OF PUBLIC WORKS

1) High-Occupancy Vehicle Preferential Parking

On-street spaces are the primary parking resources not in the control of the individual institutions. Neighborhood parking permit areas will bring regulation to the residential areas surrounding many of the institutions. However, there are spaces immediately adjacent to several institutions that are primarily used by employees of the institutions. These areas appear very desirable for providing priority parking for carpools and vanpools. It is proposed to the City that these areas be designated as high occupancy vehicle permit parking areas. Vehicles would be allowed to park all day if issued a special sticker; otherwise parking would be limited to

two hours. Stickers would only be issued to persons who certified that they were in at least a three person carpool. The area between Marshal Hale and Children's Hospitals is recommended as the first site for implementation of this concept. Preferential parking for HOV's should also be implemented at Pacific Medical Center in conjunction with the Pacific Heights Residential Permit Plan. Additionally this concept should be considered for possible implementation at Mt. Zion Hospital.

2) Parking Demand Study - Mt. Zion Vicinity

It is recommended that the Department of Public Works establish a mechanism, including funding, for a parking demand study for the general influence area of Mt. Zion Hospital. The area should include the Medical buildings which are in the vicinity of Mt. Zion as well as the immediately surrounding commercial areas. The study should identify the shortage of parking attributed to all of these activities and develop an off-street parking plan responsive to the demand. It should also deal with space allocations that will make separation of reserved spaces for poolers an integral part of the design.

3) 19th Avenue/Holloway Transit Stop Improvements

A number of modifications to this transit stop area are proposed which would involve the Department of Public Works. These are described in more detail in the previous section under MUNI improvements.

4) City College Roadway Improvements

Several roadway improvements are suggested in the vicinity of City College to improve traffic, transit and pedestrian operations and safety. None of the improvements require additional right-of-way or major construction, and hence would be relatively low in capital cost. Some would be eligible for Federal Aid Urban System Funds under the designation of TSM improvements. More detailed analysis is required to determine feasibility of the improvements, and final engineering design is also needed. Design and construction of all improvements would be the responsibility of the City's Department of Public Works. Plans should also be coordinated with MUNI due to their significant effects on transit operations. Suggested improvements are summarized below.

- Ocean Avenue/Phelan Loop (Figure 15)

  a. Convert the existing streetcar loop into a one-way street from Ocean Avenue to Phelan Avenue to accommodate left turning vehicles from eastbound Ocean Avenue to northbound Phelan Avenue, as proposed by the City. This is made possible by the planned removal of regular streetcar operations from the Phelan Loop.

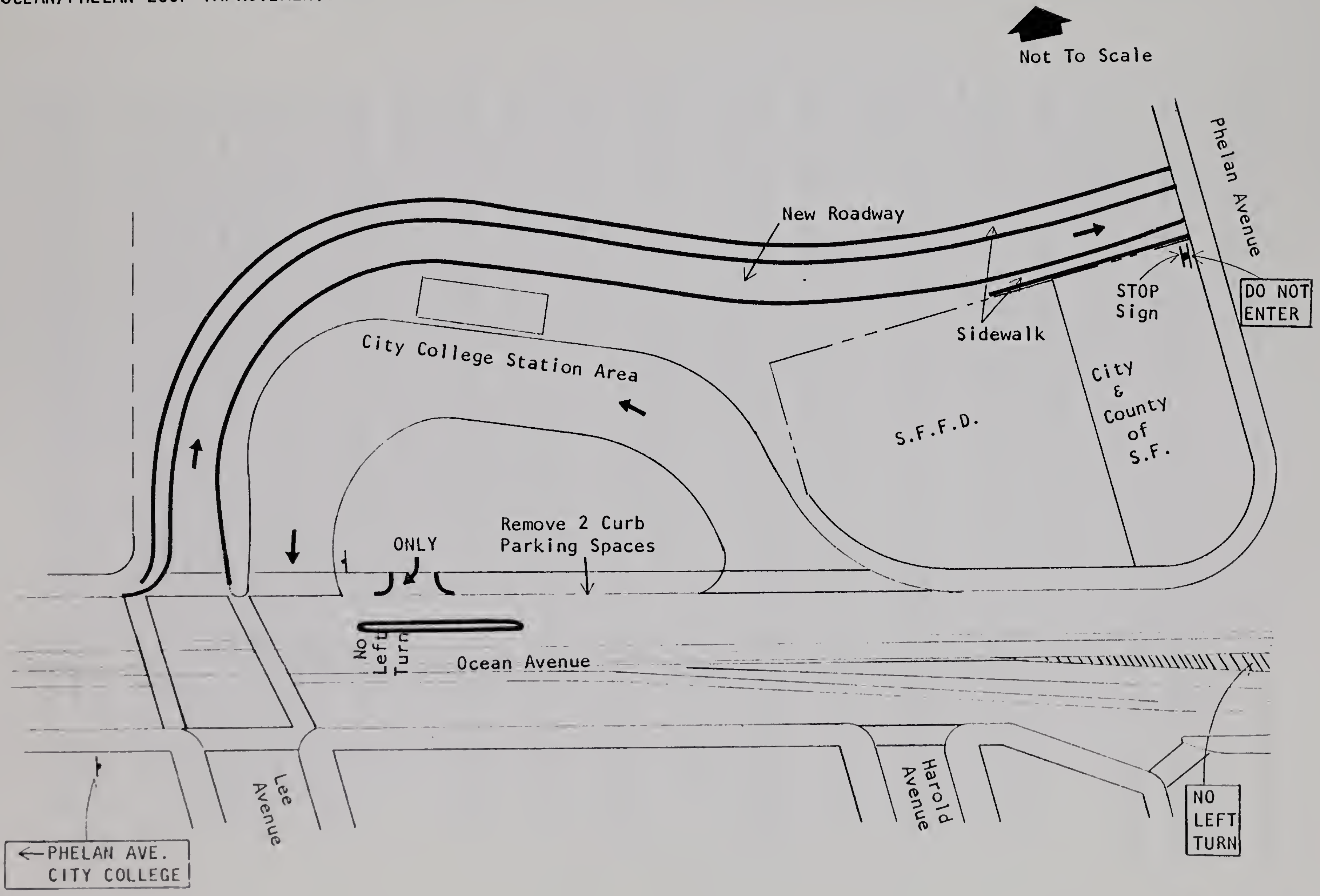
  b. Provide pedestrian sidewalk on station side of the new roadway.

  c. Prohibit left turn exit onto Ocean Avenue from existing private parking lot within the Loop.

  d. Remove curb parking (two spaces) on north side of Ocean Avenue opposite the Loop.

Figure 15

OCEAN/PHELAN LOOP IMPROVEMENTS



e. Construct raised streetcar passenger loading platforms on Ocean Avenue opposite the Loop.

f. Study feasibility and merits of prohibiting left turns from westbound Ocean Avenue to southbound Lee Avenue in light of the other improvements.

g. Study feasibility of signalizing the Ocean/Lee/Phelan Loop intersection as an alternative to four-way stops.

- Ocean/Phelan/Geneva Intersection (Figure 16)

a. Prohibit left turns from eastbound Ocean Avenue to northbound Phelan Avenue once the Phelan Loop streetcar loop is converted into a one-way bypass road (see above).

b. Stripe two eastbound through lanes on the Ocean Avenue approach, and improve demarcation of right turn only lane to southbound Geneva Avenue.

c. As an interim plan to above, restripe right turn only lane on eastbound Ocean Avenue to optional through/right turn lane.

d. Modify channelization or striping of eastbound Ocean Avenue to make right turn into gas station and residences less pronounced than nearby right turn to Geneva Avenue.

e. Place guide sign on eastbound Ocean Avenue to forewarn of lane designations and to indicate Geneva Avenue.

f. Plane "NO RIGHT TURN" sign on eastbound Ocean Avenue at northbound Geneva Avenue approach.

g. Place directional signing on westbound Ocean Avenue in advance of Phelan Avenue to indicate City College parking.

h. Install berms between streetcar and auto lanes along Ocean Avenue opposite student parking lot driveways.

i. Improve visibility of striping at the intersection.

- North Reservoir Parking Lot Entrance/Exit (Figures 17 and 18)

a. Add new parking lot exit driveway at southeast corner of reservoir (See Figure 17). Driveway should be one lane wide at base, and should flare to two lanes at street level. A pedestrian sidewalk should be placed on the north side and should connect to Phelan Avenue crosswalk. The existing entrance/exit should be converted to an entrance only, and the driveway width narrowed to provide a sidewalk on the north side. This improvement will substantially reduce traffic queues and also improve pedestrian safety. Its primary drawback is that it requires excavation into the reservoir wall.

b. As a lower cost alternative which does not require excavation of the reservoir wall, widen the existing substandard driveway on the northeast corner of the reservoir (Figure 18). The driveway should be

Figure 16
OCEAN/PHELAN/GENEVA INTERSECTION IMPROVEMENTS

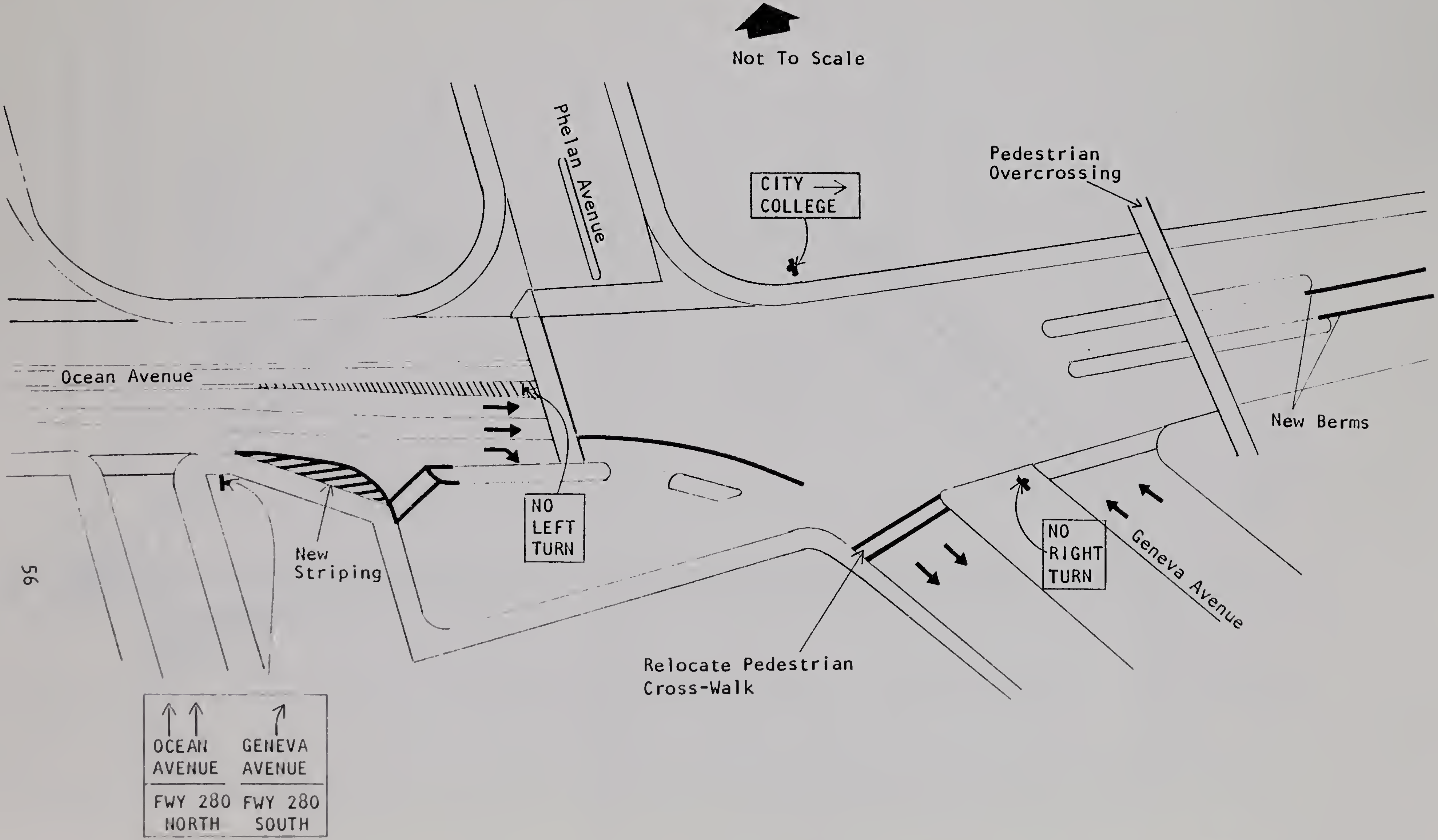


Figure 17

NEW DRIVEWAY AT NORTH RESERVOIR PARKING LOT

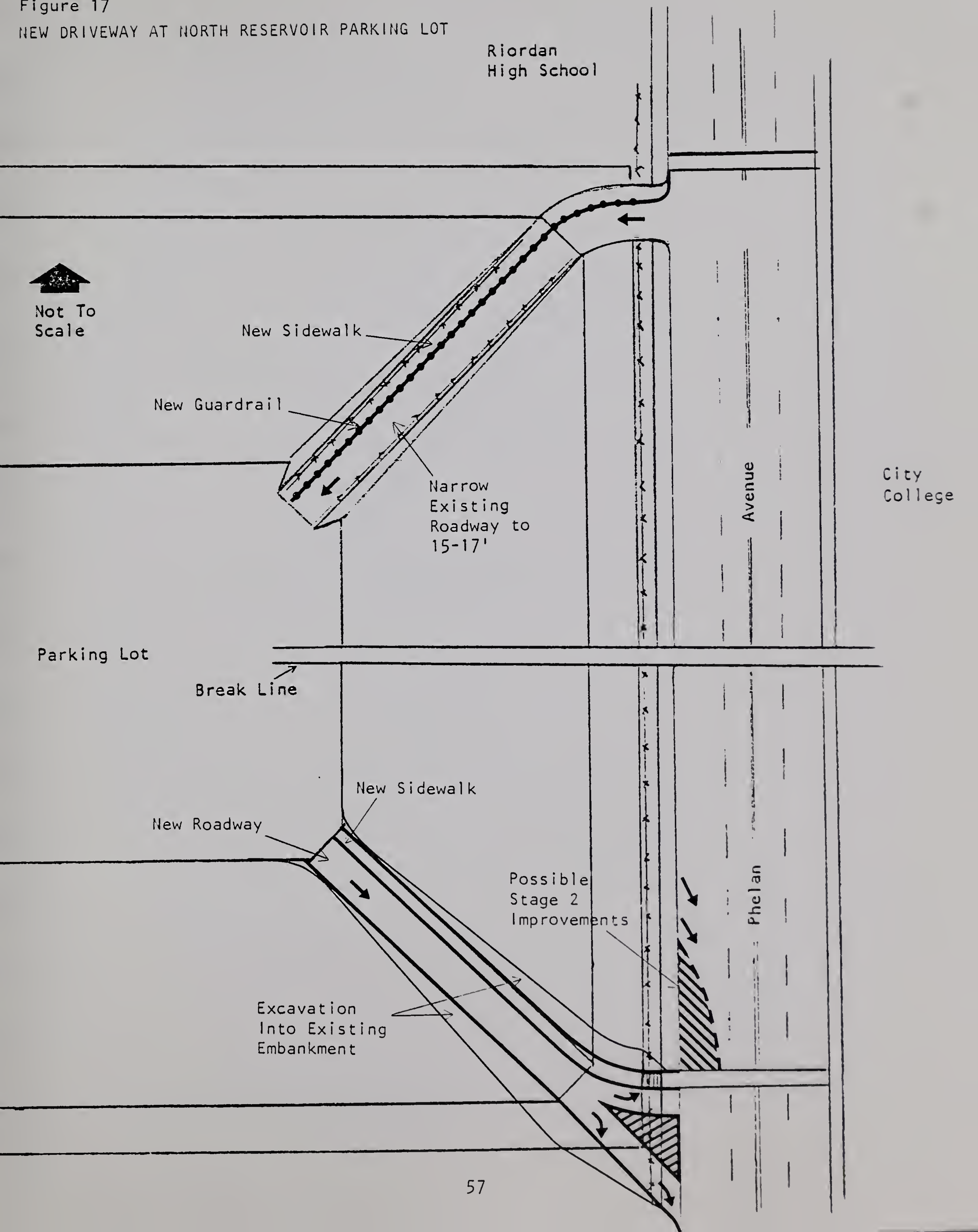
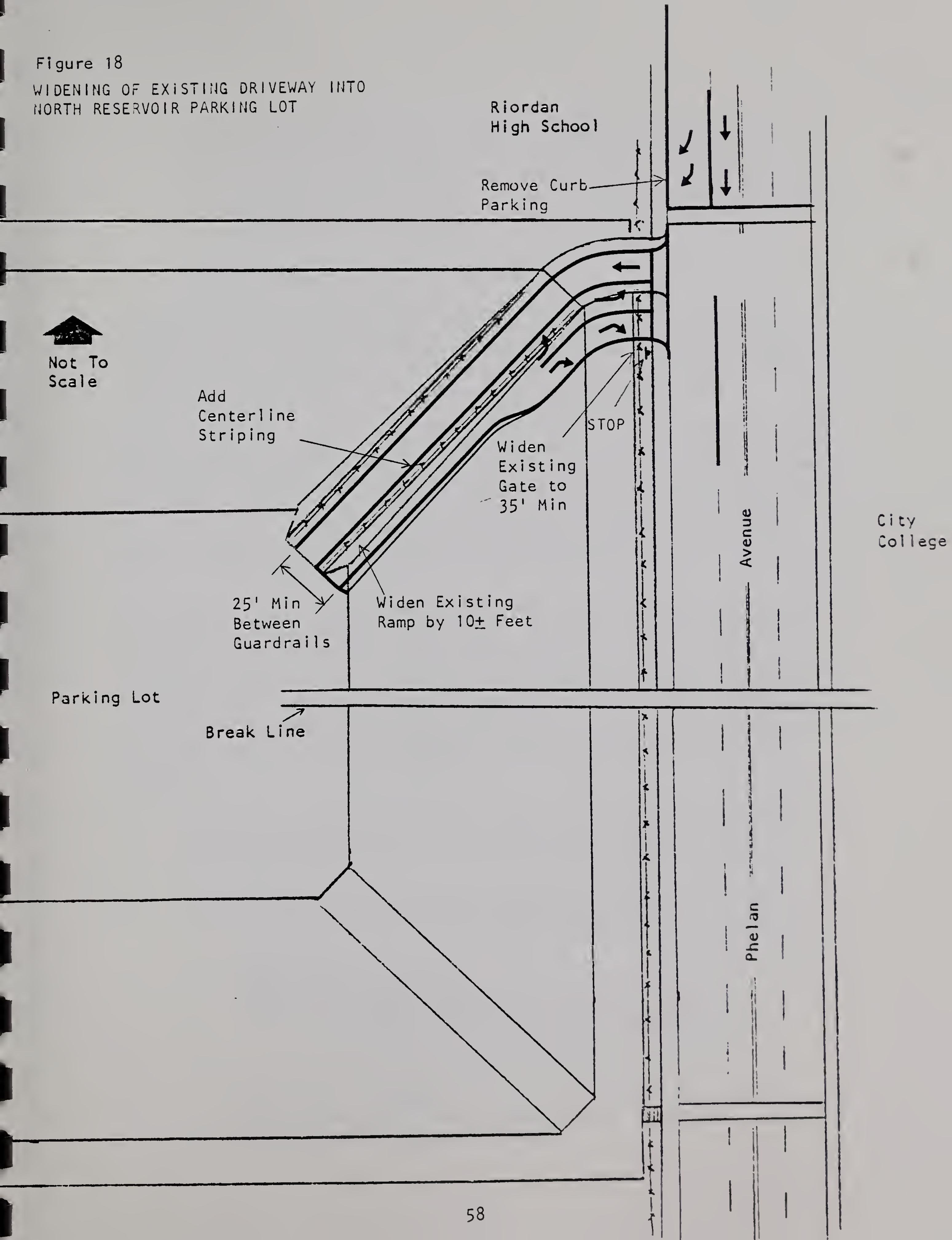


Figure 18

WIDENING OF EXISTING DRIVEWAY INTO NORTH RESERVOIR PARKING LOT



widened to the south on the order of 10 feet to allow a separated sidewalk (north side) and at least 25 feet of roadway near the base. At the street level, the driveway should be flared to provide an entrance lane and two exit lanes. The curb lane of southbound Phelan Avenue should be striped for right turns only approaching the driveway, and it should be a free lane for vehicles exiting the parking lot to the south.

5) Parking Management Strategy for USF

The parking situation at USF and general conditions at and around the campus which affect the parking situation are rather different than those of other institutions under consideration. As a result, responsive parking policies for the USF case differ substantially from those offering greatest potential at many of the other institutions.

Based on available data, there is strong suspicion that numerous students who live close to campus drive and park, either on-or off-campus. Conventional parking management mechanisms such as parking meters and fees and time limits would not be effective at USF. They would simply cause some reshuffling of "who" parks "where" rather than reducing total numbers driving to campus, and may also inconvenience neighborhood residents. And they would favor short-distance USF commuters who drive to campus for one or two classes then drive home until the next class.

The recommended parking management stragegy for USF is based on the premise that it would be more effective to encourage walking, bicycling and public transit usage by short-distance commuters (say under a mile) than to attract the normal target group -- longer distance commuters -- to shift to transit or ride-sharing. The fundamental means of accomplishing this is a parking permit system which insures that longer distance travellers occupy all the on-campus and close-to-campus spaces and forces those driving from nearby to compete for curb parking more distant from campus. The proposed priority system for permits is as follows:

- Place all spaces on the main campus, the Lone Mountain campus, and curb spaces on block faces fronting USF properties under permit control.
- Give first priority for permits for spaces closest to campus destinations to the following groups:
  - Handicapped
  - Campus service vehicles
  - Carpool and vanpool vehicles
  - Persons with special need for driving to campus
- Give second priority to:
  - Short-course attendees
  - Faculty with permit rights guaranteed by contract
  - Vehicles kept on-campus residents

- Give third priority to:

    - Faculty and staff not guaranteed permits by contract
    - Students living more than one mile from campus

- Preclude permits for students residing within one mile of campus unless they fit into one of the above special categories. (If faculty-staff permit gurantees can be eliminated, it would be desirable to impose the 1-mile limit on them too.)

Spaces on campus would be reserved for the highest priority vehicles. The remainder would be given decals for "restricted" spaces on the block faces fronting campus. Figure 19 shows block faces and approximate space totals for curb parking which could be placed under institutional permit control.

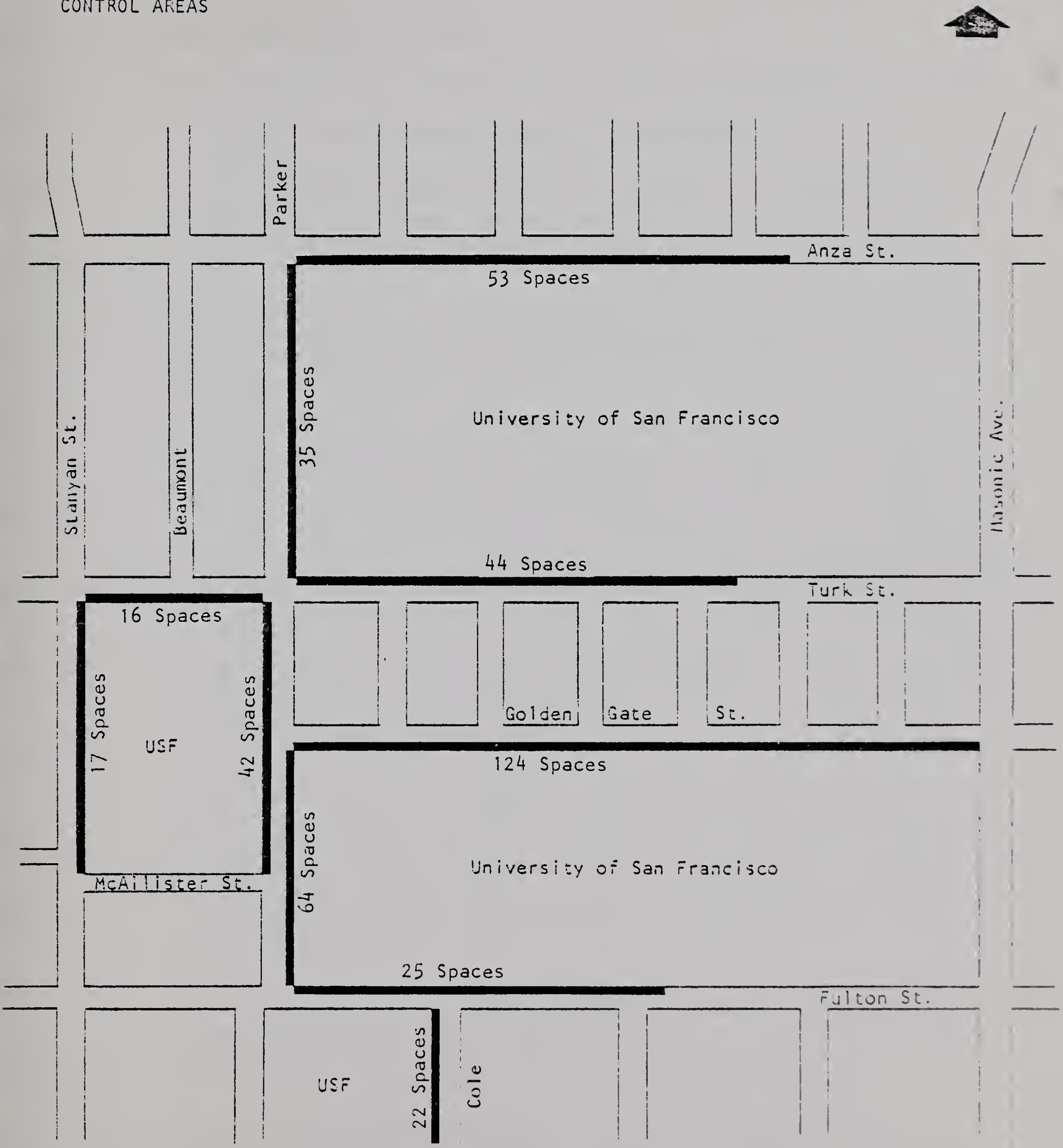
The objective, with the exception of vehicles of handicapped and pool travellers for whom the best spaces should be reserved, is not a rigid priority system; just one that excludes short-range commuters from suing the premimum on- and close-to-campus spaces. Hence, its administration need not be extremely detailed or heavy handed.

A major feature of the plan is establishment of control over curb parking spaces on blocks fronting campus. USF could implement the plan for on-campus spaces only. But a significant number of close-in curb spaces must be included if the plan is to have real punch. The 834 on-campus spaces simply comprise too small a proportion of total parking utilized; short-distance commuters would still be able to compete for a large number of attractive parking spaces. The inclusion of curb parking fronting campus would increase the amount of controlled parking by 50 percent.

It is important to recognize that this proposal is not simply one of reserving curb spaces on public streets for the fronting institution. That reservation has an essential string attached -- that these spaces and all spaces under control of the institution be managed in some specific approved plan designed to bring about net reductions in total traffic and parking generated by the institution. There is good reason to believe that an ordinance reserving certain curb spaces within the context of a positive parking management program under USF's control (as opposed to one simply reserving them to fill excess parking needs over that which can be met on campus -- just formalizing the University's claim on curb spaces as its parking supply), could be construed as a reasonable, environmentally protective measure similar to other accepted parking practices.

Enabling legislation by the Board of Supervisors upon the formal request of USF will be necessary in order to establish permit parking on curb faces fronting USF. Curb permit issuance would have to be by the City, but USF could have defacto responsibility for screening applicants and could be empowered to enforce the spaces.

Figure 19
PROPOSED CURB PARKING PERMIT
CONTROL AREAS



Total 442 Spaces

SAN MATEO COUNTY TRANSIT DISTRICT

The following service improvements are proposed for consideration by SamTrans:

1) Service To Institutions In Northern San Francisco

Transit use from San Mateo County is currently the lowest of any of the geographical areas in this study. One reason for this is the poor connection between SamTrans and several of the institutions. Improved service from SamTrans is potentially rewarding and SamTrans is actively pursuing ways of attracting people to transit.

As a regional carrier, typical SamTrans service would involve pickup and discharge in San Mateo County and express, closed-door service within San Francisco. This is precisely the type of service to which employees appear to be receptive.

Figure 20 shows one alternative routing for distribution of SamTrans passengers to the institutions. Direct service would be provided to St. Mary's, USF, Kaiser, Mount Zion, Fireman's Fund, Marshal Hale and Children's. Because they are located on the periphery of the group of institutions, a transfer would be required to reach PMC and R. K. Davies as shown in Figure 22. The seven institutions (Group A) receiving direct service on this route have 1400 employees residing in San Mateo County. There are several other groupings of institutions for San Mateo County service that appear logical. These are also shown in Table 8. The brokers of the institutions can determine which groupings to implement. Considering that UCSF supports 6 commute club buses from Marin County on an employment base of 700, it is clear that a sufficient base exists among the institutions listed to consider the initiation of direct San Mateo County service.

Examination of the distribution of employees' place of residence within San Mateo County indicates that the heaviest concentrations are in Pacifica and Daly City west of I-280. A total of 480 employees of the seven institutions on the route live in this area and would appear to be the best place to initiate route planning. Secondary concentrations appear in Daly City east of I-280 (130 employees) and in South San Francisco (140 employees). These would appear to be areas for service expansion if the Pacifica-West Daly City service proves successful.

There are two ways in which such service could be initiated. The first is scheduled service coordinated with the institutions' schedules run as normal SamTrans service. The second is club bus service (buspool) similar to that provided by Golden Gate Transit.

While SamTrans does not currently operate a subsidized club bus operation, their staff has informally expressed interest in the concept. A joint approach by a group of institutions toward initiating either type of service would appear likely to produce a positive response.

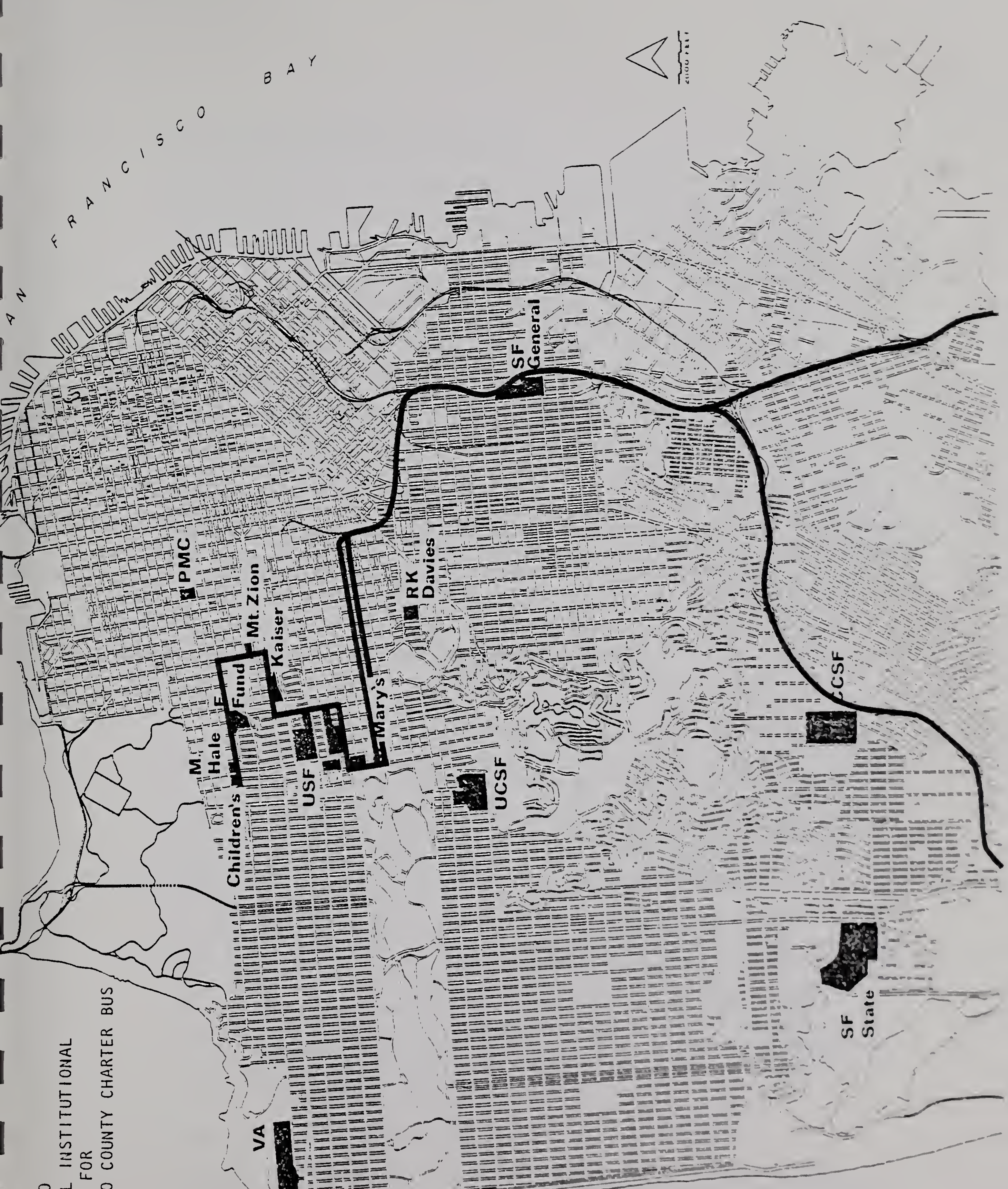


Figure 20
POTENTIAL INSTITUTIONAL
GROUPING FOR
SAN MATEO COUNTY CHARTER BUS

2) Extend SamTrans Routes to SF State

At present, only Line 3B extends north from San Mateo County as far as SF State. This is on 30-minute headways. All other SF State riders from San Mateo County must transfer to MUNI Route 70 which is slow and infrequent. One way to improve service from San Mateo County to SF State would be to extend more SamTrans routes from their Daly City BART Station terminus to campus. The logical northerly terminus would be Stonestown. Candidates for extension are SamTrans Line 5L (30 minute service), which is the main local route along El Camino Real, and various Coastside routes from Pacifica, Linda Mar and vicinity. The trial park-and-ride/express bus service from Linda Mar to the BART Daly City Station, planned for implementation in October of this year, is another candidate. Total travel time from the BART station to SF State would be 5 minutes, as compared to 12 minutes riding plus up to 24 minutes waiting for Route 70. The market for SamTrans service is potentially very large; an estimated 4,700 students and 800 employees of SF State live on the Peninsula, mostly in San Mateo County. To operate this service, SamTrans would need PUC approval, and MUNI should be assured that SamTrans operations would not interfere with MUNI operations, particularly at Stonestown. This may require designation of separate loading areas and a Stonestown layover area for SamTrans buses.

GOLDEN GATE BRIDGE, HIGHWAY AND TRANSPORTATION DISTRICT

1) Club Buses

A number of institutions would have improved access from Marin County with a club bus arrangement similar to that currently done by Fireman's Fund and UCSF. Figure 21 shows four alternative routings which provide for alternative groupings of institutions into club bus groups for Marin County service. It will be up to the brokers of the institutions to determine which of the groupings can best work together. However, as Table 9 shows, any of the groupings contain a sufficient number of employees to make a club bus arrangement possible.

It should be noted that Groups B and C include two institutions -- UCSF and Fireman's Fund -- that are currently operating club buses and that might be able to take the lead in expanding the program. Analysis of employee residence locations indicate that Mill Valley has the highest concentration of institutional employees, and it would be a logical place for joint institutional activity toward club bus arrangements. Fireman's Fund has significant number of employees in the Marinwood-Terra Linda and Novato areas which could provide the foundation for joint buspools from those areas.

2) Rerouting of Golden Gate Transit within San Francisco

In 1975, Golden Gate Transit conducted a study to determine the feasibility of rerouting its Financial District buses from Northpoint onto Broadway and its Civic Center buses from Lombard and Northpoint

Figure 21
ALTERNATIVE INSTITUTIONAL GROUPING FOR MARIN COUNTY CHARTER BUS

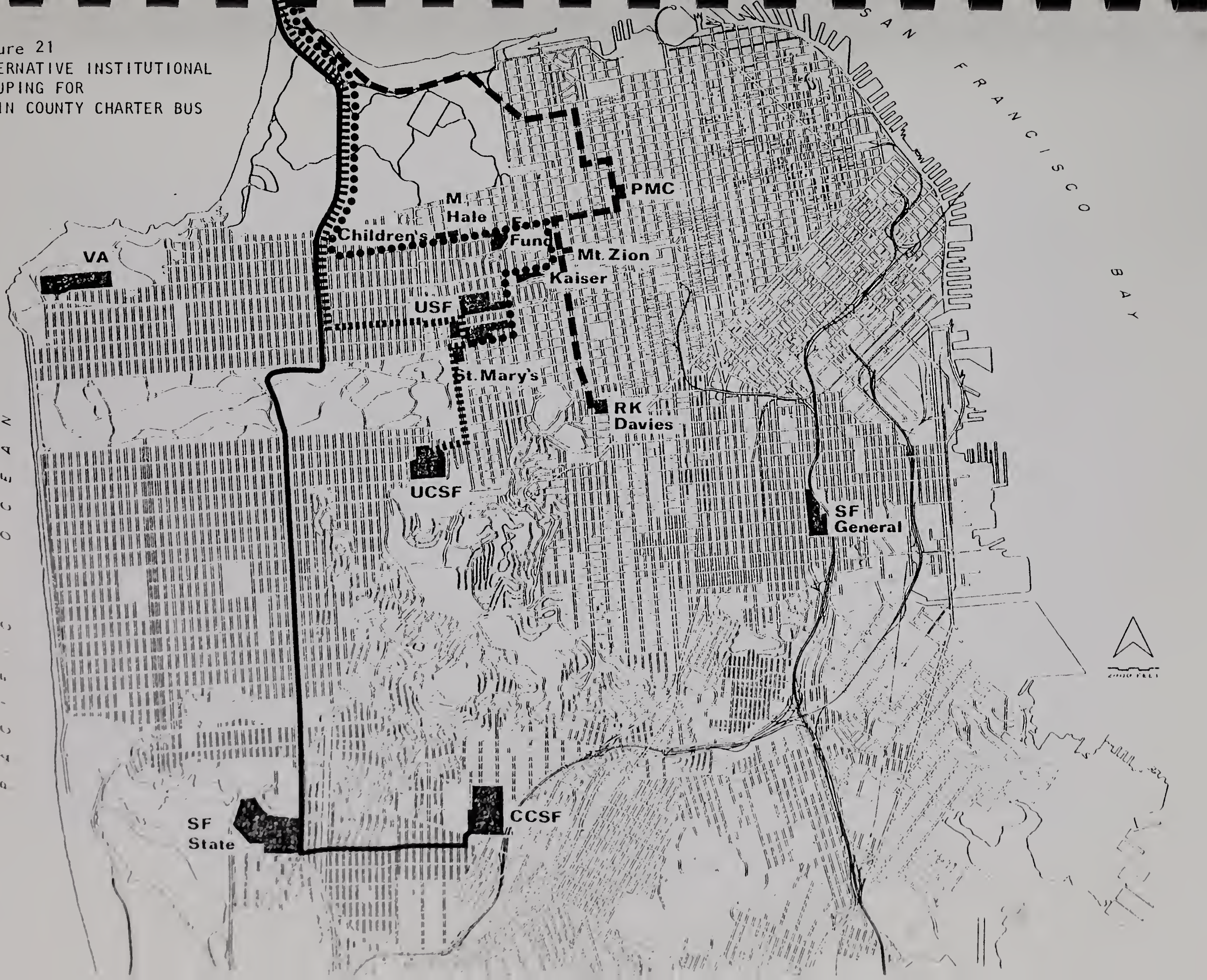


Table 8
ALTERNATIVE GROUPINGS FOR SAMTRANS SERVICE FROM SAN MATEO COUNTY

Group A	San Mateo Residents	Group B	San Mateo Residents
Children's	150	PMC	180
Marshal Hale	70	Mt. Zion	280
Fireman's Fund	170	Kaiser	300
Mt. Zion	280	R. K. Davies	160
Kaiser	300	Total	920
USF	170		
St. Mary's	240		
Total	1380		

Group C	San Mateo Residents	Group D	San Mateo Residents
SF State	770	USF	170
City College	270	St. Mary's	240
Total	1040		1110

Streets onto Park Presidio Drive and Geary Boulevard. Golden Gate Transit determined that the new routes would better serve its ridership and is continuing a feasibility study to operate on the Broadway portion of this proposed route. However, they have encountered opposition within San Francisco toward both of these ideas.

As Figure 22 shows, rerouting Golden Gate Transit buses would be of great benefit to most of the institutions in this study. Marshal Hale, Children's, Fireman's Fund, Mount Zion, Kaiser and parts of the University of San Francisco would all be within a two block walk of a Golden Gate Transit line. St. Mary's would be within 4 blocks, and PMC and Ralph K. Davies riders would have a shorter transfer than exists today. While there are some technical problems to be resolved, such as the establishment of separate bus stops to avoid interference with MUNI's high frequency 38-Geary route, this would appear to be a project that should receive strong support by the institutions in concert with Golden Gate Transit.

3) Golden Gate Vanpools

For potential vanpools from the North Bay, it is suggested that each of the institutions contact Golden Gate Transit for help in forming vanpools. It is recommended that Golden Gate Transit actively work collectively with the institutions in forming pools from the North Bay.

Figure 22
POSSIBLE REROUTING OF
GOLDEN GATE TRANSIT ROUTES

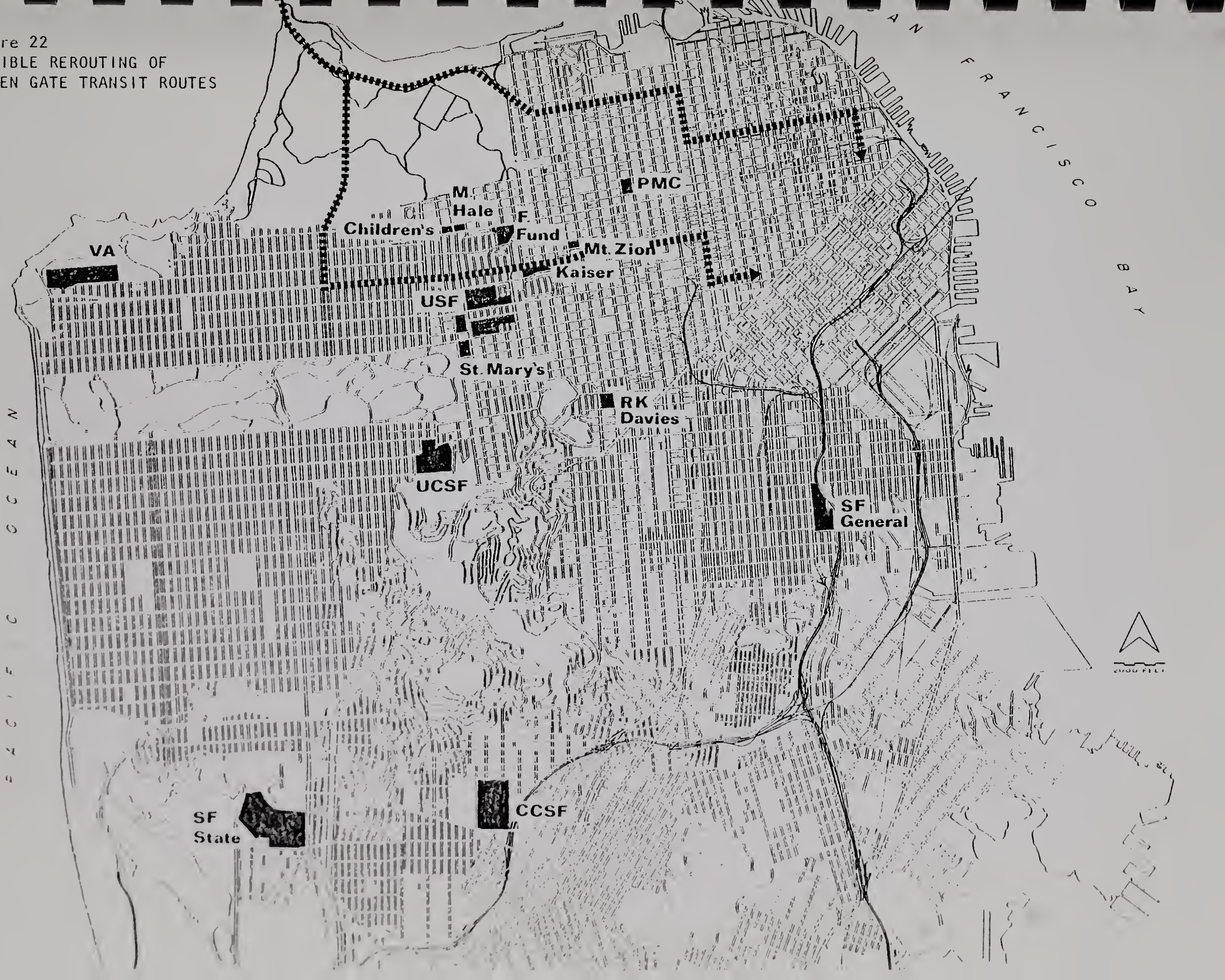


Table 9
ALTERNATIVE GROUPINGS FOR JOINT CLUB BUS ARRANGEMENTS FROM MARIN COUNTY

Group A	Marin Residents	Group B	Marin Residents
San Francisco State	220	USF	110
City College	120	St. Mary's	200
		UCSF	670
Total	340		980

Group C	Marin Residents	Group D	Marin Residents
Children's	150	PMC	200
Marshal Hale	30	Mt. Zion	190
Fireman's Fund	400	Kaiser	250
Mt. Zion	190	R. K. Davies	50
Kaiser	250		
USF	110		
St. Mary's	200		
Total	1330		690

RIDES FOR BAY AREA COMMUTERS

RIDES is an important resource available at no cost to the individual Transportation Brokers in the areas of ride-sharing facilitation and promotion. RIDES' involvement in the TSM programs should include:

- Provision of rider-matching services for carpoolers and vanpoolers as necessary to supplement in-house matching of applicants.
- Provision of vehicles for vanpools as well as for special midday shuttle services as appropriate.
- Provision of promotional materials and advice, including ride-sharing applications forms.
- Assistance in conducting carpool and vanpool workshops and formation meetings.

- Tailoring of ride-sharing application forms to student population groups as appropriate.

- Assistance in coordinating ride-sharing promotions and operations among participating institutions.

RIDES staff have been highly successful in providing similar services to other major employers in the Bay Area, and they have actively supported the ongoing TSM program from its inception.

APPENDIX A

EMPLOYEE TRANSPORTATION SURVEYS

Employee transportation surveys were a major source of information on existing travel patterns at the participating institutions as well as on perceptions and interests of employees in transportation alternatives.

At a few of the institutions, questionnaire surveys had been recently conducted which were considered adequate and valid for purposes of this study. At a number of others, however, it was necessary to undertake new surveys as a part of this study. At two campuses, USF and SF State, available surveys were considered only marginally acceptable (particularly for students) but timing of the study did not permit new surveys to be done. The various employee surveys used in this study and their response rates are summarized in Table A-1.

Figure A-1 shows the questionnaire survey developed for this study. It was used for all employee surveys conducted in this study except at Fireman's Fund for which minor modifications were necessary to the job classification headings.

The questionnaires were accompanied by letters from the institutions requesting completion of the surveys and indicating where the surveys were to be returned.

Additionally, the surveys were serialized and respondents who indicated interest in ride-sharing were asked to write the questionnaire number, along with name and telephone number, onto the letter and return it with the questionnaire. In this way, a list of respondents who indicated interest in ride-sharing was developed along with their travel patterns. This list was forwarded directly to the Transportation Brokers for their use.

Table A-1

SURVEY RESPONSE RATES

	DATE	SAMPLE SIZE	RESPONSE RATE
Previous Surveys			
Children's	1978	902	75%
Kaiser	1978	451*	27%*
Mt. Zion	1977	764	38%
City College			
Faculty/Staff	1976	707	58%
Students	1978	17,202	70%
SF State			
Students	1973	1,000*	5%
UCSF			
Students	1977	NA	NA
Faculty/Staff	1978	357	30%
USF			
Students	1978	389	8%
Faculty/Staff	1978	394	33%
Current Surveys			
Marshal Hale	1979	369	90%
PMC	1979	1,164	70%
RK Davies	1979	369	40%
St. Mary's	1979	485	30%
SF General	1979	217	8%
Veteran's	1979	373	23%
SF State (Fac./Staff)	1979	950	35%

* Random sample of responses

NA: Not Available

Figure A-1

TRAVEL SURVEY

Questionnaire Number: ___ /1-5

WORK INFORMATION

1. Please mark the classification that most closely describes your job.

Administrator, Management 1 ___ /6-7
Doctor 2 ___
Nurse 3 ___
Office Worker 4 ___
Paramedical Staff 5 ___
Professor, Teacher 6 ___
Service Worker (Maintenance, Security, Dietary, Housekeeping, etc.) 7 ___
Student 8 ___
Volunteer 9 ___

2. Are you employed full time? Yes 1 ___ /8
No 2 ___

3. How many years have you worked at your present location? ___ /9-10

4. What time do you usually start work? Hr. ___ /11-12 : Min. ___ /13-14 1 ___ AM 2 ___ PM /15

5. What time do you usually leave work? ___ /16-17 : ___ /18-19 1 ___ AM 2 ___ PM /20

6. Do you work a rotating shift (varying from week to week)? Yes 1 ___ /21
No 2 ___

7. Which days of the week do you usually work? (If your shift rotates, please indicate the days you work this week.)

Monday 1 ___ /22
Tuesday 1 ___ /23
Wednesday 1 ___ /24
Thursday 1 ___ /25
Friday 1 ___ /26
Saturday 1 ___ /27
Sunday 1 ___ /28

8. Does your schedule change periodically (every few months)? Yes 1 ___ /29
No 2 ___

9. Do you usually work late at least once per week? Yes 1 ___ /30
No 2 ___

If yes, how many days a week? ___ /31

TRAVEL INFORMATION

10. How do you usually travel to work?

Drive Alone 1 ___ /32-33
Dropped off at Work 2 ___
Carpool (Ride or Drive with 1-6 other People) 3 ___
Vanpool (Ride or Drive with 7-14 other people) 4 ___
Public Transit 5 ___
Charter Bus (Buspool) 6 ___
Motorcycle 7 ___
Bicycle 8 ___
Walk 9 ___
Other ___ 10

11. If you carpool or vanpool, how many people, including yourself, are usually in the car? ___ /34-35

12. How many minutes does your trip to work take? ___ /36-38

13. About how many miles do you commute to work? ___ /39-40

14. What is the zip code at your place of residence? ___ /41-45

If unknown, please give the street corner nearest your home:

___
Streets City

IF YOU DRIVE TO WORK....

15. How many days a week do you drive? ___ /46

16. Where do you usually park?

Employer's garage or lot with permit 1 ___ /47
Employer's garage or lot without permit 2 ___
Public garage or lot 3 ___
Private garage or lot 4 ___
On-street 5 ___
Other 6 ___

17. Do you pay to park? Yes 1 ___ /48
No 2 ___

If yes, how much? Daily $ ___ /49-50 . ¢ ___ /51-52
or
Monthly ___ /53-54 . ___ /55-56

18. Do you use your car for work purposes during the day or after work? Yes 1 ___ /57
No 2 ___

How many days a week? ___ /58

19. Do you use your car for personal reasons during or immediately after work? Yes 1 ___ /59
No 2 ___

How many days a week? ___ /60

IF YOU USE TRANSIT FOR ANY PART OF YOUR TRIP TO WORK....

20. Do you use ... (Check all that you use.)

Muni 1 ___ /61
BART 1 ___ /62
Golden Gate 1 ___ /63
AC Transit 1 ___ /64
SamTrans 1 ___ /65
Charter Bus 1 ___ /66
Southern Pacific 1 ___ /67
Other 1 ___ /68

21. If you use Muni, which routes do you use?

___ /69-70 ___ /71-72 ___ /73-74

22. Do you purchase a monthly transit pass? Yes 1 ___ /75
No 2 ___

23. How many transfers do you make on each trip to work? ___ /76

24. How do you get to the transit stop from home?

Drive 1 ___ /77
Ride in Car 2 ___
Bicycle 3 ___
Walk 4 ___
Other ___ 5

Figure A-1 (Cont'd)

Please indicate how satisfied you are with existing transportation to work:

	Very Satisfied	Satisfied	Neutral	Dis-satisfied	Very Dis-satisfied	No Opinion	
Amount of Off-Street Parking	1 ___	2 ___	3 ___	4 ___	5 ___	6 ___	/6
Location of Off-Street Parking	___	___	___	___	___	___	/7
Cost of Parking	___	___	___	___	___	___	/8
Parking Safety and Security	___	___	___	___	___	___	/9
Directness of Transit Service	___	___	___	___	___	___	/10
Frequency of Transit Service	___	___	___	___	___	___	/11
Hours of Transit Service	___	___	___	___	___	___	/12
Reliability of Transit	___	___	___	___	___	___	/13
Safety and Security of Transit	___	___	___	___	___	___	/14
Cost of Transit	___	___	___	___	___	___	/15

Please indicate whether you agree or disagree with the following statements:

DRIVING	I Agree	Don't Agree	Not Sure	This Doesn't Apply to Me	
I enjoy driving my car to work and prefer to make all my work trips that way.	1 ___	2 ___	3 ___	4 ___	/16
I would rather be a passenger in a car that drive.	___	___	___	___	/17
CARPOOLING					
I would consider joining a carpool if it met my schedule.	1 ___	2 ___	3 ___	4 ___	/18
I would consider joining a carpool if I got free parking.	___	___	___	___	/19
I would consider joining a carpool if a company car were available to me during the day.	___	___	___	___	/20
I need my car after work; a carpool would be too inconvenient.	___	___	___	___	/21
My hours are too variable; a carpool would be to inflexible.	___	___	___	___	/22

VANPOOLING

DEFINITION: A "vanpool is an arrangement where you or a fellow employee drives a van and 8-15 passengers to work and back. The driver pays nothing for the trip and is allowed to use the van for personal trips in the evenings and on weekends. The passengers share the cost of the trip, which is usually much less than the cost of driving alone.

	I Agree	Don't Agree	Not Sure	This Doesn't Apply to Me	
I would like to learn more about vanpools.	1 ___	2 ___	3 ___		/23
I would be interested in driving a vanpool.	___	___	___		/24
I would be interested in being a passenger in a vanpool.	___	___	___		/25
TRANSIT					
I use transit because I have no other way to get to work.	1 ___	2 ___	3 ___	4 ___	/26
Transit is convenient for my trip.	___	___	___	___	/27
I would use transit if it ran more often.	___	___	___	___	/28
I would use transit if I didn't have to transfer.	___	___	___	___	/29
If it met my schedule, I would use an express bus from:					
The East Bay Terminal	___	___	___	___	30
A BART Downtown Station	___	___	___	___	31
The Southern Pacific Station	___	___	___	___	32
I would consider using transit if my employer paid part of the cost.	___	___	___	___	33
I would use transit if I was sure I could get a seat.	___	___	___	___	34
I feel it is not safe to use transit.	___	___	___	___	35
The nearest bus stop is too far from my home.	___	___	___	___	36
Public transit does not stop near enough to where I work.	___	___	___	___	37
I would be interested in a charter bus that started in my neighborhood and ran non-stop to work.	___	___	___	___	38
If my employer were able to arrange reduced rate parking at another location and provide a shuttle bus from the lot to work, I would make use of it.	___	___	___	___	39